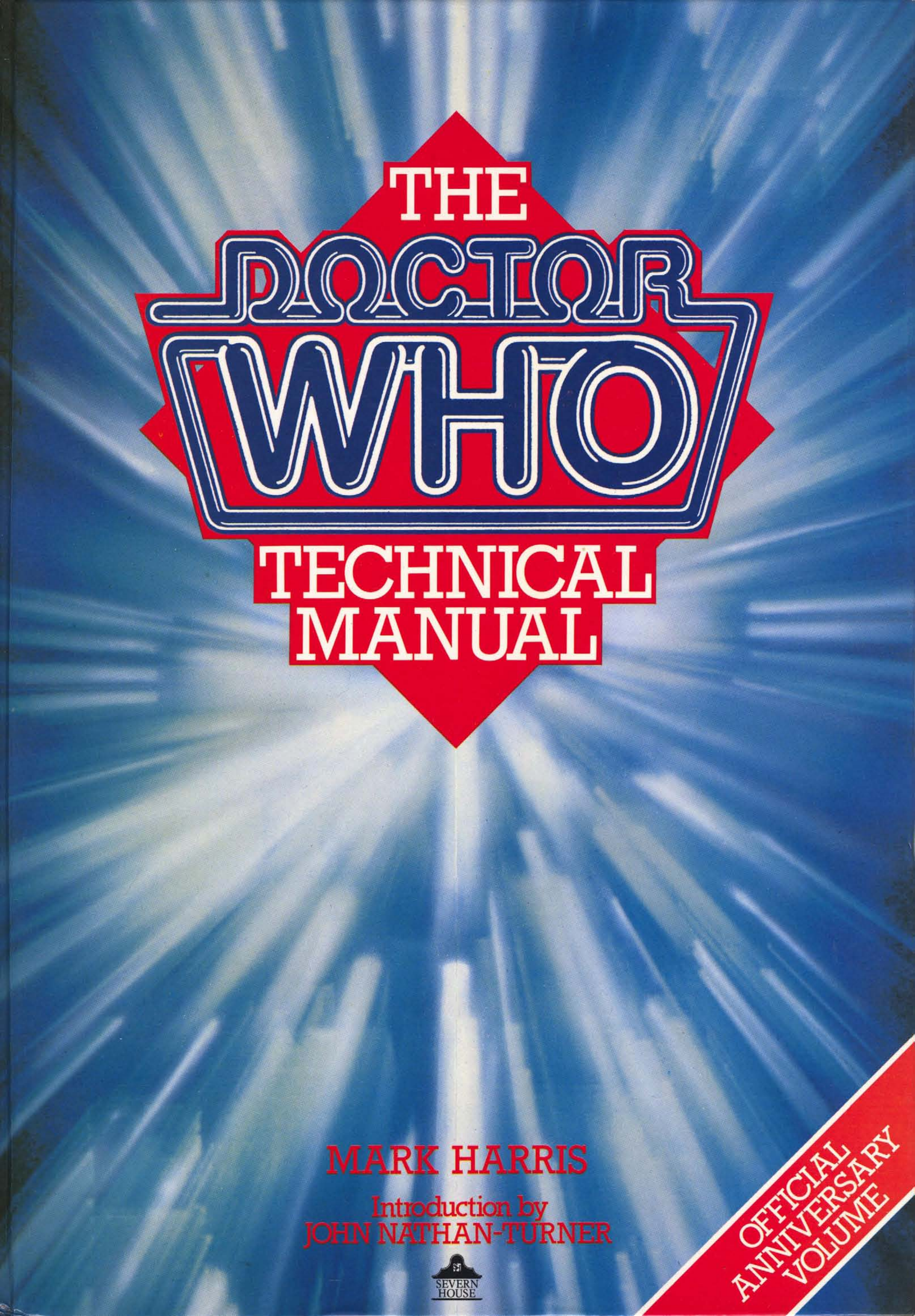


THE DOCTOR WHO TECHNICAL MANUAL

MARK HARRIS

Introduction by
JOHN NATHAN-TURNER

OFFICIAL
ANNIVERSARY
VOLUME

SEVERN
HOUSE

THE
DOCTOR
WHO
TECHNICAL
MANUAL

THE DOCTOR WHO TECHNICAL MANUAL

MARK HARRIS

SEVERN
HOUSE

This title commissioned and first published 1983 by
SEVERN HOUSE PUBLISHERS LTD, of 4 Brook Street,
London W1Y 1AA.

Text copyright © 1983 Mark Harris
Illustrations copyright © 1983 Mark Harris
BBC Copyright Photographs

ISBN 0 7278 2034 6

Published by arrangement with the British
Broadcasting Corporation.

Publisher's Note
While every effort has been made to trace the original creators of these models, apologies are extended to those whom, despite the best endeavours, it has not been possible to contact. Upon receipt of appropriate information any inadvertent errors will be corrected in future printings.

Set in Franklin Gothic by Tarmigan Publicity Ltd, London EC1

Cover and colour section produced and printed by Raithby
Lawrence Ltd

Made and printed in Great Britain by The Anchor Press Ltd,
and bound by Wm Brendon and Son Ltd, both of Tiptree,
Essex

ACKNOWLEDGEMENTS

The author would like to thank the following friends for their help during the preparation of this book:

John Nathan-Turner – for his patience, help and advice
Eric Saward, Script Editor, DOCTOR WHO
Jane Judge, DOCTOR WHO Production Office
Martin Hussey, Lorne Martin and Julie Jones – BBC Enterprises
Ian Scoones – for reference material on his spacecraft designs
Jeremy Bentham, John McElroy and Members of the DOCTOR WHO Appreciation Society Executive
Marion van der Voort
Frank Clarkson and all his staff at the DOCTOR WHO Exhibition, Blackpool
Richard Farmer and Dave Watkin – for reference material
Kaye Moss, Gary Tomkins, Steve Begg and John Harris
John Back at the Metropolitan Police Archives – for information on the Police Telephone Box
Martin Marsden – for his fast and efficient photographic processing service

Barbara Levy, my editor at Severn House, for her faith, encouragement and enthusiasm; and to Keith Lovegrove, their designer.

Subjects in this book created by:

Terry Nation	– Davros, The Daleks and the Movellans (© – Lynstead Park Enterprises Ltd)
Bob Baker and Dave Martin	– K9
Gerry Davies and Kit Pedlar	– The Cybermen
Terrance Dicks	– The Robot
(Script Editor during the Jon Pertwee period until ROBOT, the first Tom Baker serial.)	
Jon Pertwee	– The Doctor's Car
David Whitaker	– Servo Robot
David Fisher	– The Jagaroth Spaceship
Dave Martin	– Earth/Titan Shuttle
Norman Ashby	– The Quarks
Peter Ling	– The White Robot
Anthony Read	– Skonnos Blaster

CONTENTS

INTRODUCTION 7
WHO IS THE DOCTOR? 8
THE TARDIS 10
POLICE BOX 12
TARDIS TOOL BOX 13
TARDIS TOOL KIT 14
SONIC SCREWDRIVER 15
TARDIS MASTER CONTROL CONSOLE 16
DAVROS AND THE DALEKS 18
K-9 33
THE CYBERMEN 36
THE CYBERMAT 41
THE ROBOT 42
THE SERVO ROBOT 44
QUARKS 46
WHITE ROBOT 47
MOVELLANS 48
MOVELLAN SIDE-ARM 49
SKONNOS BLASTER 50
SPACE FREIGHTER 52
EARTH/TITAN SHUTTLE 54
JAGAROTH SPACESHIP 56
THE DOCTOR'S CAR 58
BUILD A TARDIS 60

INTRODUCTION

One of the most interesting parts of my job as Producer of 'Doctor Who' is the liaison with Design Group personnel – those responsible for the set, costumes, make-up and visual effects. The highly talented individuals who work on 'Doctor Who' transform the writer's "a huge spaceship looms in space" and "the room looks like the inside of a lady's handbag" into reality. This manual is a tribute to their expertise.

Mark Harris's attention to detail is astounding and his introductory articles record part of the 'Doctor Who' legend.

This fitting tribute to a programme which started twenty years ago is something that all those who read it will treasure. If anything happens to the BBC's Police Box, rest assured I now know how to make one!

JOHN NATHAN-TURNER

WHO IS THE DOCTOR?

In the constellation of Kasterborus, at galactic co-ordinates ten zero eleven zero zero by zero two from galactic zero centre lies Gallifrey – the planet of the Time Lords.

On Gallifrey lives an immensely intelligent and highly civilised race. Gallifreyans have a unique endowment – the ability to regenerate their bodies, to prevent premature death. At such times they take on a completely new physical appearance. Gallifreyans may regenerate as many as twelve times in one lifetime.

Even more important than this ability, however, are the Gallifreyans' many extraordinary discoveries. They have opened the doors to the time barrier and unlocked the secret of travel through the Fifth Dimension. It is upon that secret that the tradition of the Time Lords has been founded.

The Time Lords monitor all the happenings and events that occur in time and space. They train at their respective Academies depending on their chapters of which there are three: the Arcalians, the Patrexes and the Prydonians.

Legends speak of Omega, a great and gifted time engineer, who created the super-nova explosion which in time became the Crab Nebulae. This gave the Gallifreyans the power they needed to develop the time travel capsules called TARDIS(Time and Relative Dimensions In Space). Rassilon, the original leader of the Time Lords, captured a black hole which provided the Time Lords with a constant, stable power source to perfect their researches. It was Rassilon who created the symbols of power held by the President of the High Council – The Matrix, a link to the Amplified Panatropic Complex (APC Net), the computer which contains the memories of all the Time Lords who have ever lived – the Sash which protects the wearer from the energies of the black hole – the Rod and the Great Key which are used in harnessing the energies of the black hole.

The early Time Lords used their powers to try to help the people of the planet Minyos develop their civilisation; despite these efforts, though, the Minyans destroyed each other in nuclear wars. Only then did the Time Lords realise the potential harm of their discoveries. They instituted laws governing time travel, limiting themselves to the role of observers. They vowed only to interfere in the affairs of other cultures in the most extreme cases of injustice.

Throughout Time Lord history there have been those who have left Gallifrey to pursue their own ideals and ambitions. Among these 'renegade' Time Lords are names such as K'Anpo, who lived on Earth as a Tibetan monk, and Drax, the builder of Mentalis, a giant computer on the planet Zeos. By far the most dangerous is the Master, an evil and avaricious Time Lord whose lust for power has allied him to some of the most ruthless elements in the Universe. A deadly hypnotist, his trademark is murder – and his favourite weapon a gun which compresses his victims' atoms, leaving doll-sized corpses.

Most extraordinary of all the 'renegade' Time Lords is the Doctor. Bored with the laws of non-intervention, he rejected the teachings and principles of his tutor, Cardinal Borusa and those of the Prydonian Academy, and left Gallifrey with his grand-daughter in a stolen TARDIS to explore the Universe for himself.

An idealist, the Doctor disagreed with the policies of his former masters, believing that they should use their powers to right the injustices in the Universe. Together with various companions that he met on his travels the Doctor fought evil and oppression wherever he found it.

On one occasion, though, he was faced with the problem of returning thousands of soldiers back to Earth and their proper time periods. With no other choice open to him, the Doctor sent a telepathic message back to Gallifrey requesting help. In doing so he had at last revealed his location; although he tried to escape in the TARDIS, the Time

Lords captured him and he was put on trial.

The Doctor defended himself well. He accused his own people of neglecting the care of lesser species endangered by universal evil. He told the court of the horrors of the Universe – the cold, uncaring Ice Warriors, the half-machine Cybermen and, most terrible of all, the dreaded Daleks.

The prosecution moved that the Doctor be subjected to total disintegration and that all record that he had ever existed be erased from Gallifreyan history. The court, however, decided to show leniency. After all, the Doctor had risked his own life on many occasions in order to help others. The Time Lords sentenced him to exile on twentieth century Earth for an indefinite period. The dematerialisation circuit was sabotaged in his TARDIS and the secrets of its operation were erased from his mind. The Time Lords agreed that his appearance be changed as he was so well-known on Earth.

The Doctor's rebellion brought about a gradual shift in Time Lord policies and led to the formation of the Celestial Intervention Agency, a secret organisation which intervenes in the affairs of the Universe when necessary – often using the Doctor as its reluctant agent.

On Earth, the newly regenerated Doctor encountered Brigadier Alistair Lethbridge-Stewart, with whom he had worked twice before against the Yeti and the Cybermen. He agreed to work with the Brigadier again as scientific advisor to the British division of the United Nations Intelligence Taskforce (UNIT). In return the Doctor was given a workshop, a car, and the full technical resources of UNIT with which he could try to rediscover the secrets of the TARDIS. Moreover, working within the confines of a top security organisation, the Doctor was saved from being asked too many awkward questions. He was given a bogus identity, that of Doctor John Smith.

During his term of exile, the Doctor was engaged on a number of missions for the Time Lords and although he was always willing to help others, he resented being manipulated and longed for his freedom. After years of being stranded on Earth, the Doctor summoned the Time Lords: a black hole created by a now-deranged Omega was draining the Time Lords' energy source, and the Doctor's brilliant mind was needed to help divert impending tragedy.

With the mission successfully achieved, thanks to the help of his two former selves (in itself a contravention of the First Law of Time), a new dematerialisation circuit appeared on top of the control console and suddenly all the dematerialisation codes and secrets of the TARDIS came back to him. The Time Lords had forgiven him, they had given him back his freedom and he was allowed to resume his travels through time and space.

He does occasionally return to Gallifrey, and indeed was once elected president of the High Council, but resigned shortly afterwards. His inquisitive and enquiring mind would not allow him to remain in the same place for too long. The Doctor now travels the Universe as a free agent representing the forces of good.

THE TARDIS

The Doctor roams the Universe in a vehicle known to its inventors, the Time Lords, as a TARDIS. The letters stand for Time And Relative Dimensions In Space and, as this title suggests, it is far more than just a time machine. It is capable of transporting its operator and passengers through time and space to any planet in the Universe and to any point in that planet's history.

The Doctor's is an old 'type 40' TARDIS, also known as a Mark I, built as a mobile research laboratory which would carry its crew of scientists to survey distant galaxies, explore fabulous new worlds and observe astronomical events. The type 40 TARDIS has since been superseded by more efficient and better equipped models.

From the outside, the Doctor's TARDIS resembles a Metropolitan Police Telephone Box*. This is due to the *chameleon circuit,* a device incorporated into the ship's circuitry, which scans the landing site and then alters the exterior just prior to materialisation. Under normal circumstances, the TARDIS would look like a tree, a rock or anything else which would blend with the surroundings of the planet on which it has landed. Unfortunately, after the Doctor's visit to Earth in the early 1960's (Earth time), this mechanism failed to function and ever since, the TARDIS has remained locked in the form of a Police Box.

The TARDIS is totally indestructible and if its exterior is attacked it will dematerialise instantly rematerialising close by, but out of danger, providing that the Doctor has set the H.A.D.S. (Hostile Action Displacement System). Amazingly, the TARDIS is infinitely bigger on the inside than the outside. This is due to one of the key discoveries made by the Time Lords, that of *temporal physics.* On entering the TARDIS through the outer door, one actually crosses a bridge into another dimension. The exterior of the TARDIS 'exists' in the real world, but the interior is within a different but *relative* dimension. The gleaming white interior of the control room contains the very nerve centre of the craft, the main control console, which has many different flight functions. The main ones are: –

NAVIGATION – from which the Doctor plots his course.

GUIDANCE SYSTEMS COMPUTER – ensuring that the TARDIS remains on course.

ENVIRONMENTAL CONTROLS – to maintain such things as temperature, gravity, atmosphere, etc, within the TARDIS.

DRIVE SYSTEMS – The master dematerialisation switch is mounted on this panel; when activated it engages the ship's power source, thus causing the exterior atoms to dissolve from the real Universe and reassemble in the time vortex.

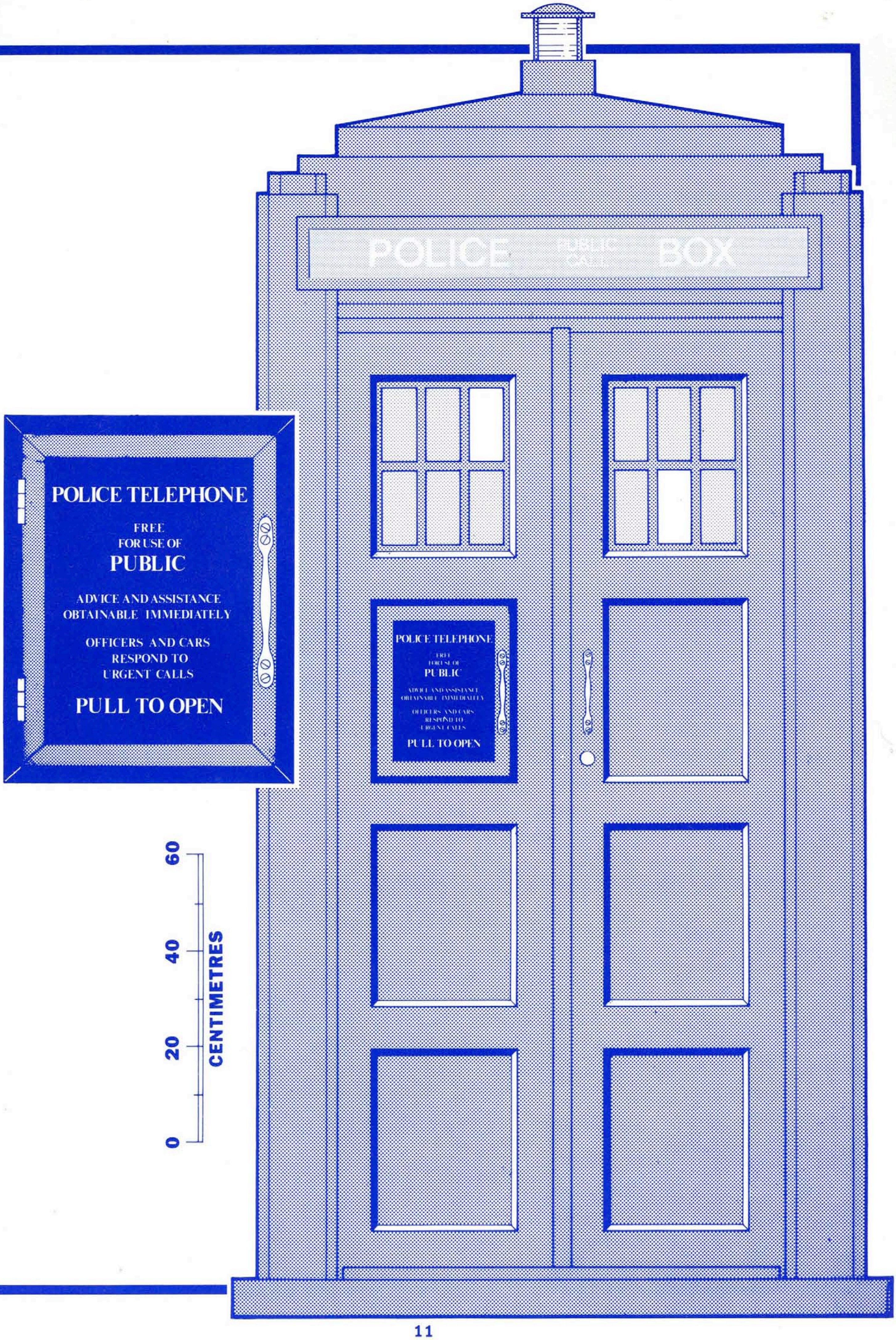
Located at the centre of the control console is the *time rotor.* This is a transparent cylindrical column containing various instruments. It rises and falls during flight, each time providing the Doctor with a complete status report on the ship's power source. On the wall behind the control console is a *scanner,* a viewing screen which offers a view outside the ship.

The TARDIS is completely self-contained. Its labyrinth of halls, passages, dormitories, storage areas and laboratories contains a vast wardrobe of clothes and costumes from many planets and cultures. This can enable the TARDIS crew to visit other worlds and periods without drawing attention to themselves.

So advanced is Time Lord technology that the TARDIS may be said to be semi-sentient – that is to say, it is almost a living, thinking entity. It is attuned to the Doctor's thought patterns and is telepathically linked to him.

---

* A 'lock-up' where apprehended criminals may be temporarily detained by law enforcement officers. It also houses a communications device from which members of the public and officers of the law may call for assistance.


POLICE
PUBLIC CALL
BOX
POLICE TELEPHONE
FREE
FOR USE OF
PUBLIC
ADVICE AND ASSISTANCE
OBTAINABLE IMMEDIATELY
OFFICERS AND CARS
RESPOND TO
URGENT CALLS
PULL TO OPEN
0
20
40
60
CENTIMETRES

POLICE BOX

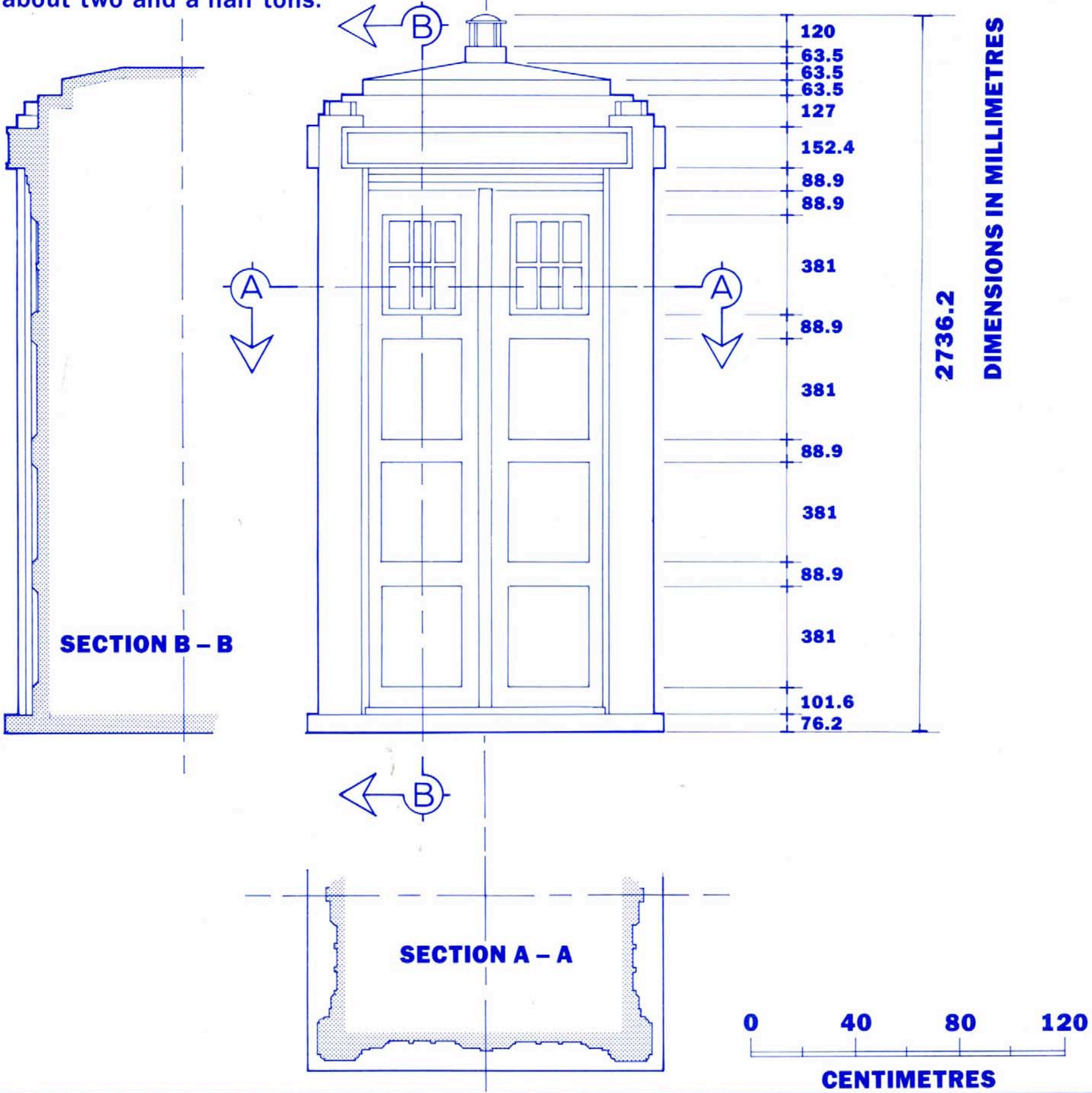
THE HISTORY OF THE POLICE BOX

The Metropolitan Police Telephone Box was the successor to the old 'watch box', established in the London area early in the 19th Century.

The first Police Boxes were introduced from America in 1888. The earliest Police Box to resemble the Doctor's was set up in Newcastle in 1929. Originally of timber, these boxes were later made of reinforced concrete and weighed about two and a half tons.

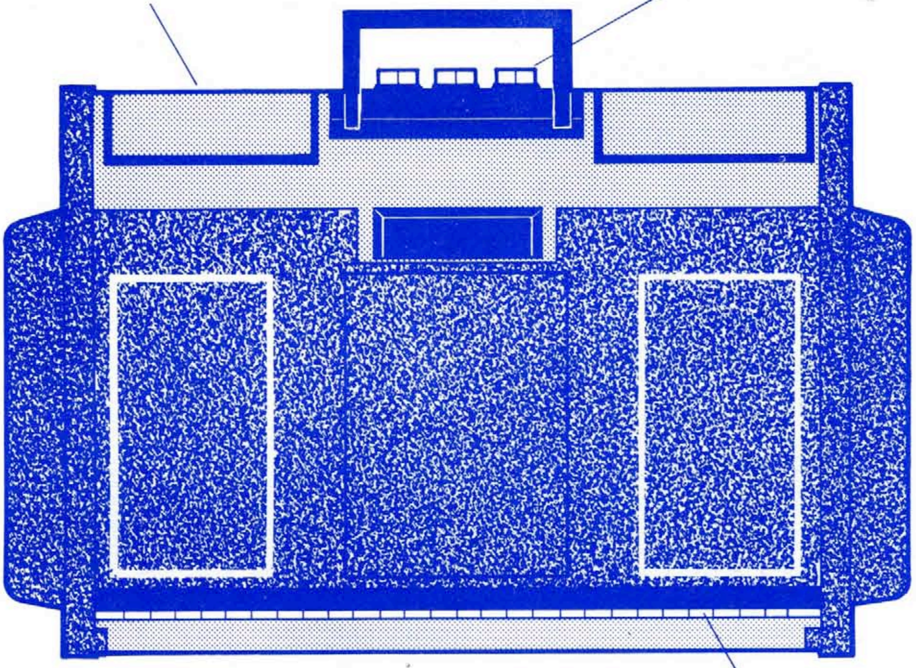
Police Boxes of the Tardis type were first erected in London in 1930. They cost £43 each and by December 1953 there were 685 of them, as well as 73 Police Telephone Posts, in the Metropolitan Police District.

By 1969 technology had overtaken the Police Box. With the introduction of personal radio communications equipment, the Police Box began to be phased out.

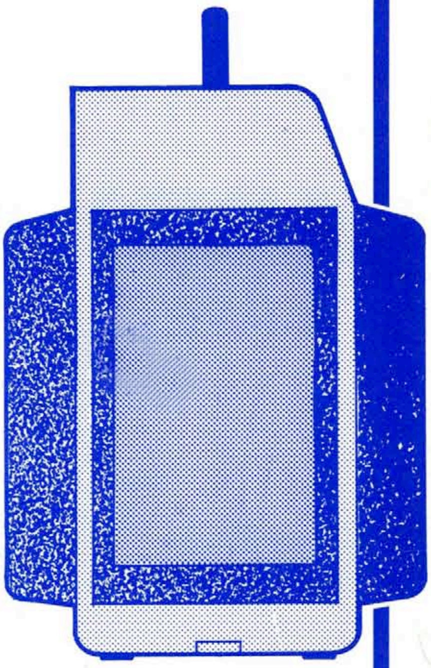

B
A
A
B
120
63.5
63.5
63.5
127
152.4
88.9
88.9
381
88.9
381
88.9
381
88.9
381
101.6
76.2
2736.2
DIMENSIONS IN MILLIMETRES
SECTION B – B
SECTION A – A
0
40
80
120
CENTIMETRES

TARDIS
TOOL BOX

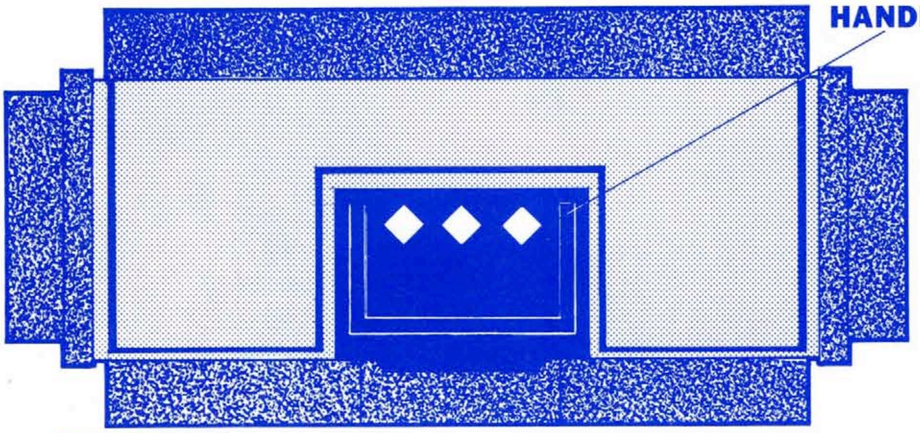
STORED IN MASTER CONTROL ROOM


PERSONALISED TOUCH-SENSITIVE LOCK
OPERATIONAL LIGHTS (GREEN) INDICATE THAT ALL EQUIPMENT IS FUNCTIONING NORMALLY
HINGE

FRONT ELEVATION



SIDE ELEVATION


HANDLE IN FOLDED POSITION

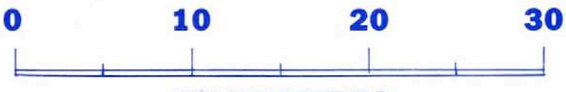
PLAN

WHITE ☐

LIGHT GREY ▨

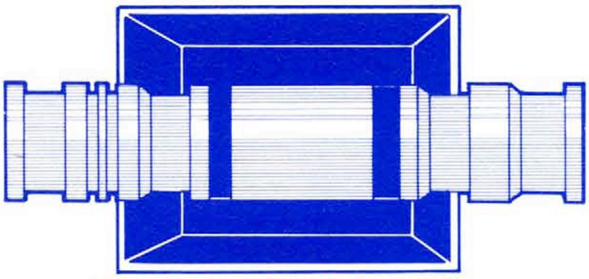
BLACK (TEXTURED SURFACE) ▩

BLACK ■

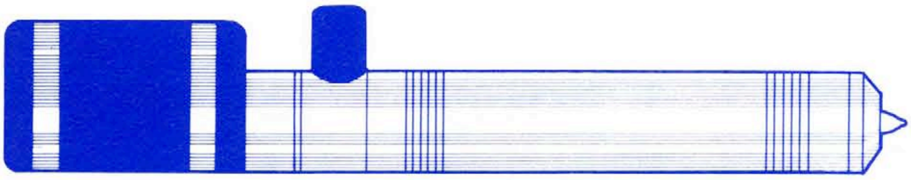

0
10
20
30
CENTIMETRES

TARDIS
TOOL KIT

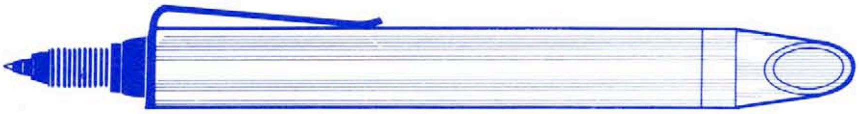
The tools on this sheet, with the exception of the pen torch and laser, are highly advanced pieces of technology. Their uses are various and highly adaptable.



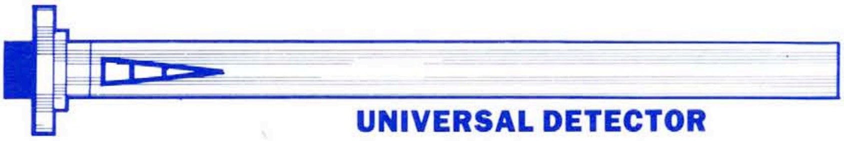
MASTER DRONE CLAMP



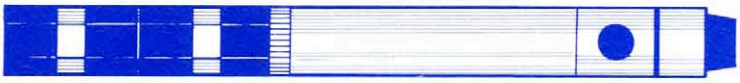
LASER



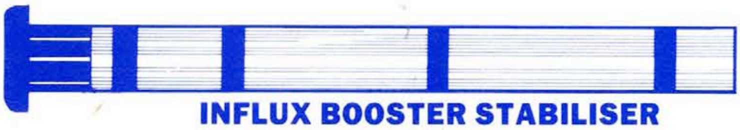
PEN TORCH



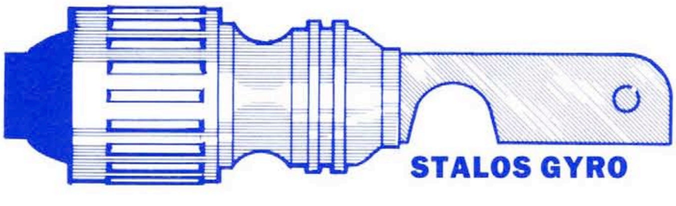
UNIVERSAL DETECTOR



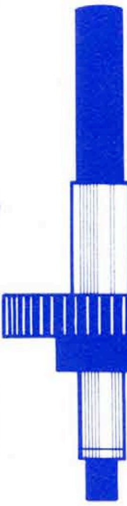
NEUTRON RAM



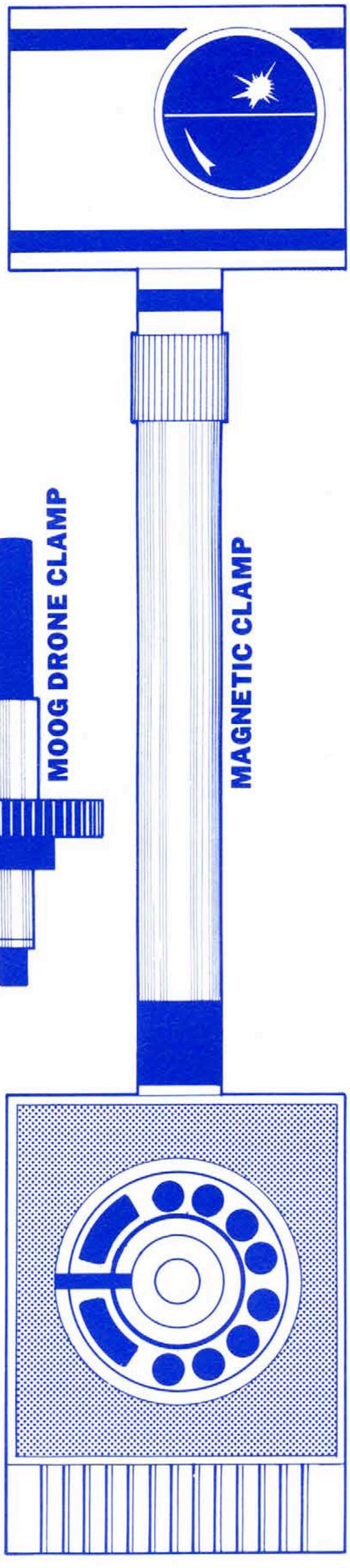
INFLUX BOOSTER STABILISER



STALOS GYRO



MOOG DRONE CLAMP



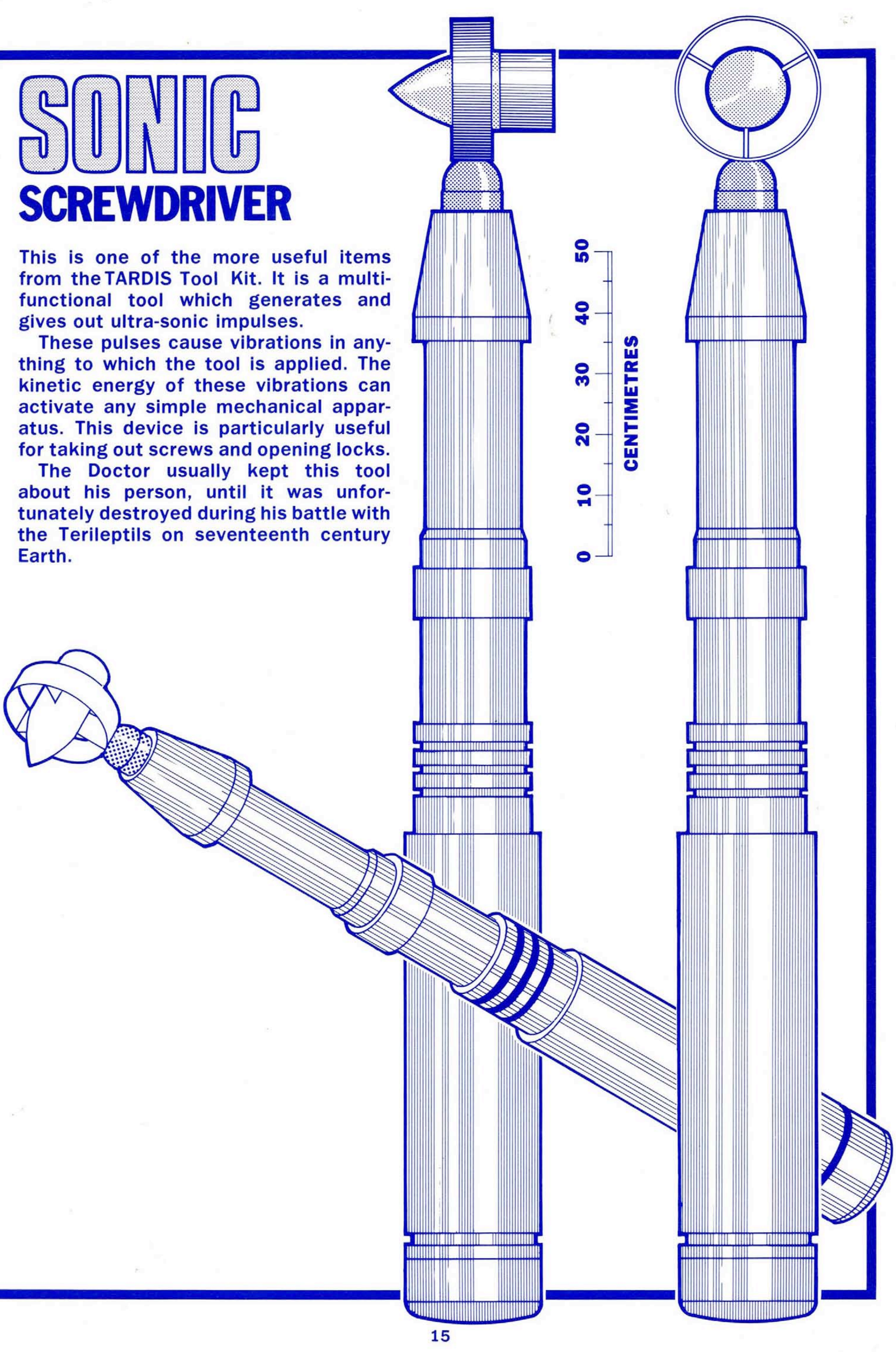
MAGNETIC CLAMP

SONIC SCREWDRIVER

This is one of the more useful items from the TARDIS Tool Kit. It is a multi-functional tool which generates and gives out ultra-sonic impulses.

These pulses cause vibrations in anything to which the tool is applied. The kinetic energy of these vibrations can activate any simple mechanical apparatus. This device is particularly useful for taking out screws and opening locks.

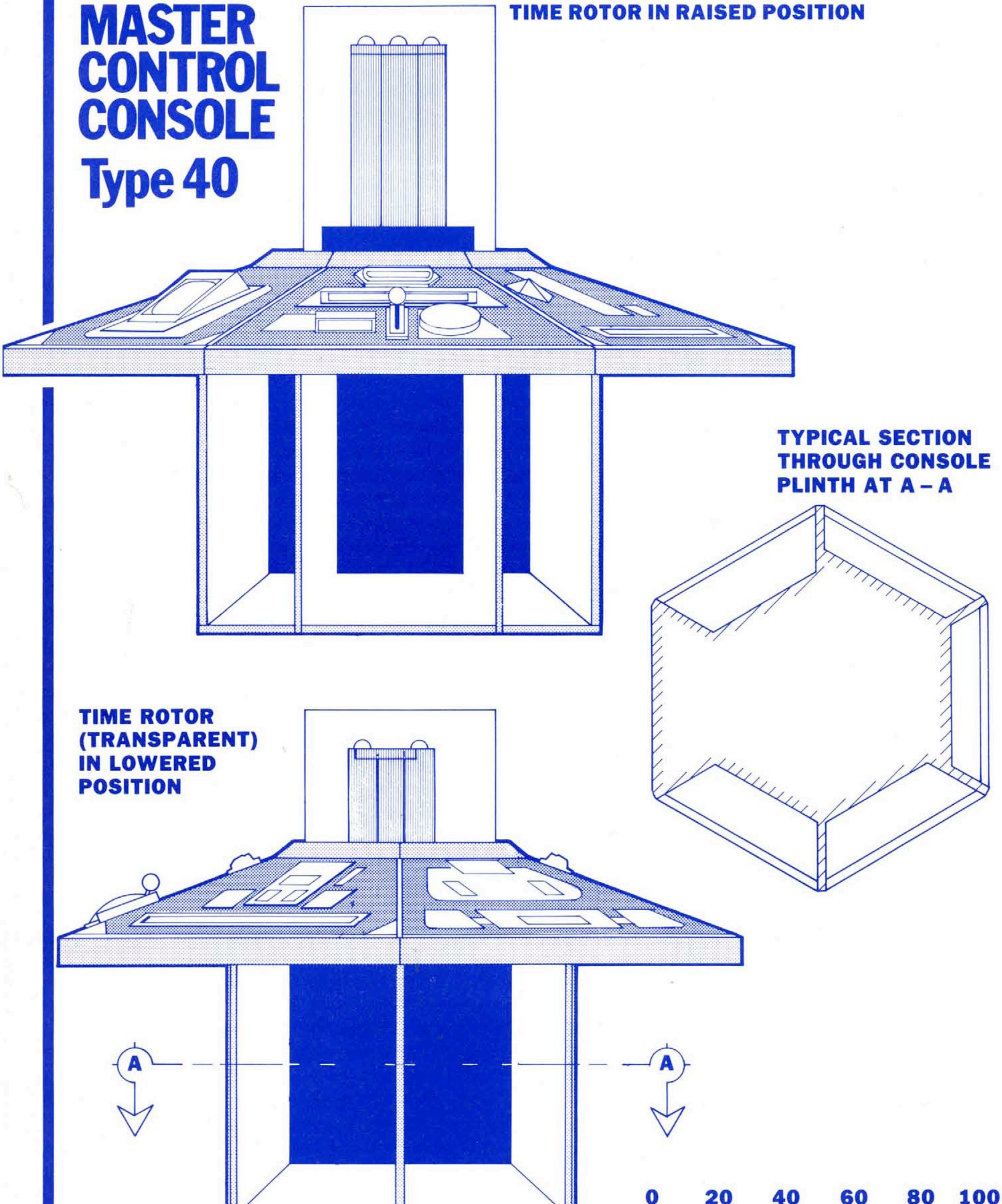
The Doctor usually kept this tool about his person, until it was unfortunately destroyed during his battle with the Terileptils on seventeenth century Earth.



TARDIS

MASTER CONTROL CONSOLE

Type 40



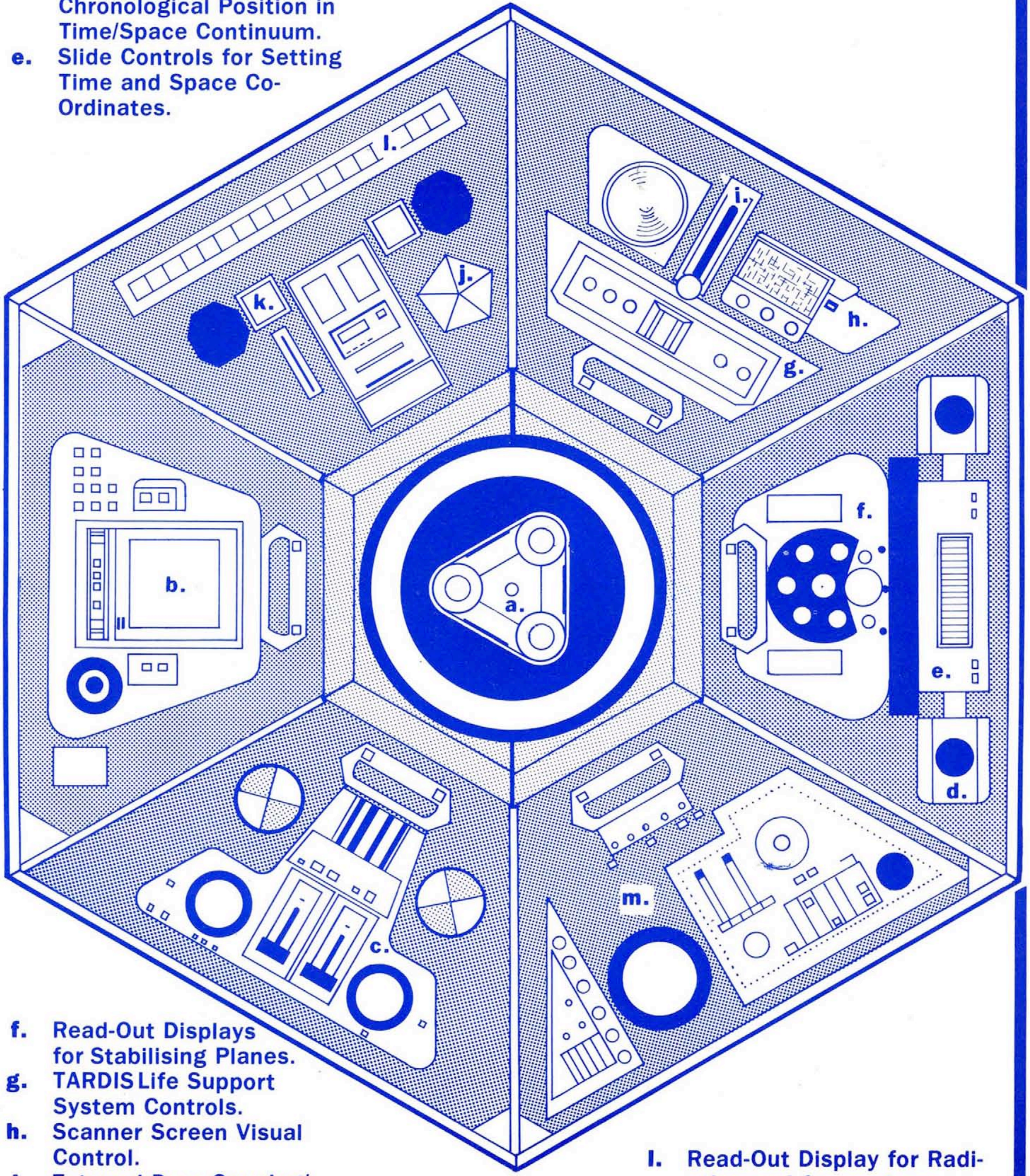
TIME ROTOR IN RAISED POSITION

TYPICAL SECTION THROUGH CONSOLE PLINTH AT A – A

TIME ROTOR (TRANSPARENT) IN LOWERED POSITION

A
A
0
20
40
60
80
100
CENTIMETRES

- **a.** Time Rotor.
- **b.** Computer Read-Out Screen.
- **c.** Auxiliary Power Control.
- **d.** Display Showing Exact Chronological Position in Time/Space Continuum.
- **e.** Slide Controls for Setting Time and Space Co-Ordinates.



- **f.** Read-Out Displays for Stabilising Planes.
- **g.** TARDIS Life Support System Controls.
- **h.** Scanner Screen Visual Control.
- **i.** External Door Opening/Closing Mechanism.
- **j.** Gallifrey Recall Indicator.
- **k.** Controls for Defunct Chameleon Circuit.
- **l.** Read-Out Display for Radiation and Atmosphere Analyser.
- **m.** TARDIS Central Computer. (In many respects the heart of the Time Machine, controlling all its delicate and intricate functions.)

DAVROS
AND THE DALEKS

The history of the Daleks as presented in the DOCTOR WHO series has two conflicting origins. In the first Dalek story the Daleks were originally called Dals and both they and their enemies the Thals were humanoid. After a nuclear war, the Dals mutated into monstrosities while the Thals mutated full circle into a race of physically perfect beings. Such was the Dals' hatred of these beings that they retreated into shells, became Daleks, and determined to destroy any life form unlike themselves.

This second version of their history, involving Davros, contradicts these previous facts.

Skaro – a barren, war-torn planet – was ravaged by generations of neutron warfare between its two humanoid nations, the Dals (later known as Kaleds) and the Thals. Unable to live with their differences they had launched into a bitter war.

In an effort to bring the war to a swift conclusion, the Kaled government formed a Scientific Elite Corps. All of their most eminent scientists were assembled in a fortified, underground bunker, a few miles from the main Kaled dome. With all the Kaleds' scientific and technical resources at their disposal, their task was to develop new weapons to enable them to win the war.

However, they were soon to turn their attention to the survival of their own race. Sporadic fighting had once again broken out on the surface and, as a result of their exposure to the atmosphere, genetic mutations were becoming increasingly common among their newborn.

The Supreme Commander of the Special Scientific Division was Davros, a brilliantly gifted scientist. A mutant himself, Davros had only barely survived the blast of an atomic shell which had destroyed his laboratory during one of the Thal bombardments.

Holding on to life by the merest thread, he had designed for himself a mobile life-support chair to aid his failing internal organs. His sight, his hearing and his speech were mechanically and electronically assisted. A pitiful and horrifying sight, Davros depended entirely upon the chair for his survival. Without it his twisted and deformed husk of a body would not have lived more than thirty seconds. However, despite his physical abnormalities, his phenomenal intellect was unimpaired.

Conducting experiments on the new mutants, Davros became aware that the genetic changes were irreversible. He decided to accelerate the mutation process in an effort to discover the creature into which the Kaleds would ultimately evolve. This he achieved, only to find that they were to become small, crab-like beings, incapable of surviving for any great length of time.

Davros decided to design life-survival units for the Kaled mutants. Based on his own life-support chair, he developed self-contained, mobile survival vehicles which would provide the feeble mutants with a stable and controlled environment. At the same time, an array of sensory apparatus would supply audio and visual data on the vehicles' external surroundings.

The Kaled people praised Davros for his efforts but were unaware of the plans which he had for his creation. Not content with assuring the survival of his race, Davros had become obsessed with producing the ultimate survivors, a race who would conquer the Thals and go on to reign supreme in the Universe.

Making additions to the survival-unit design, he equipped them with weapons of enormous destructive capabilities. Then, most terrifyingly, he performed micro-surgical operations on the embryo mutants themselves. By introducing chromosomal variations into their genetic structure, he removed all traces of emotions such as love, pity, fear and compassion, and replaced them with his own ideals, desires and motives. No longer were they mere survival-units but fully self-contained war machines. Davros had created a race of creatures motivated by hatred and totally devoid of conscience. Their inbred arrogance led them to believe they were superior to all other living creatures.

With the completion of the first prototypes, the Universe saw the birth of a new race of beings whose name was destined to strike fear into the hearts of countless millions. Davros named them himself – the DALEKS – an anagram of Kaleds.

The Doctor, meanwhile, had been sent to Skaro by the Time Lords. Their Temporal Projections had discovered a time stream in which the Daleks had destroyed all other intelligent life forms and had become the dominant species in the Universe.

He arrived on the planet just prior to the Daleks' creation. His mission – to prevent their creation or to alter their genetic development, allowing them to evolve into much less aggressive creatures.

The Doctor tried to convince the Kaled government that they should put an end to Davros' work on the Daleks and close down the bunker, telling them of the carnage, pain and cruelty which they would bring.

The High Council agreed that Davros' experiments should be suspended, pending an investigation. However, by this time Davros had installed fully automated assembly lines in the workshops on the lower levels. The Incubator Room contained row upon row of glass tanks of embryo mutants, later to be implanted into the Dalek machines. Davros was poised to begin production on his creation and would not tolerate such interference from the government. In an attempt to prevent the termination of his work, he passed on to the Thals the formula for the solvent of the Kaled dome's indestructible coating.

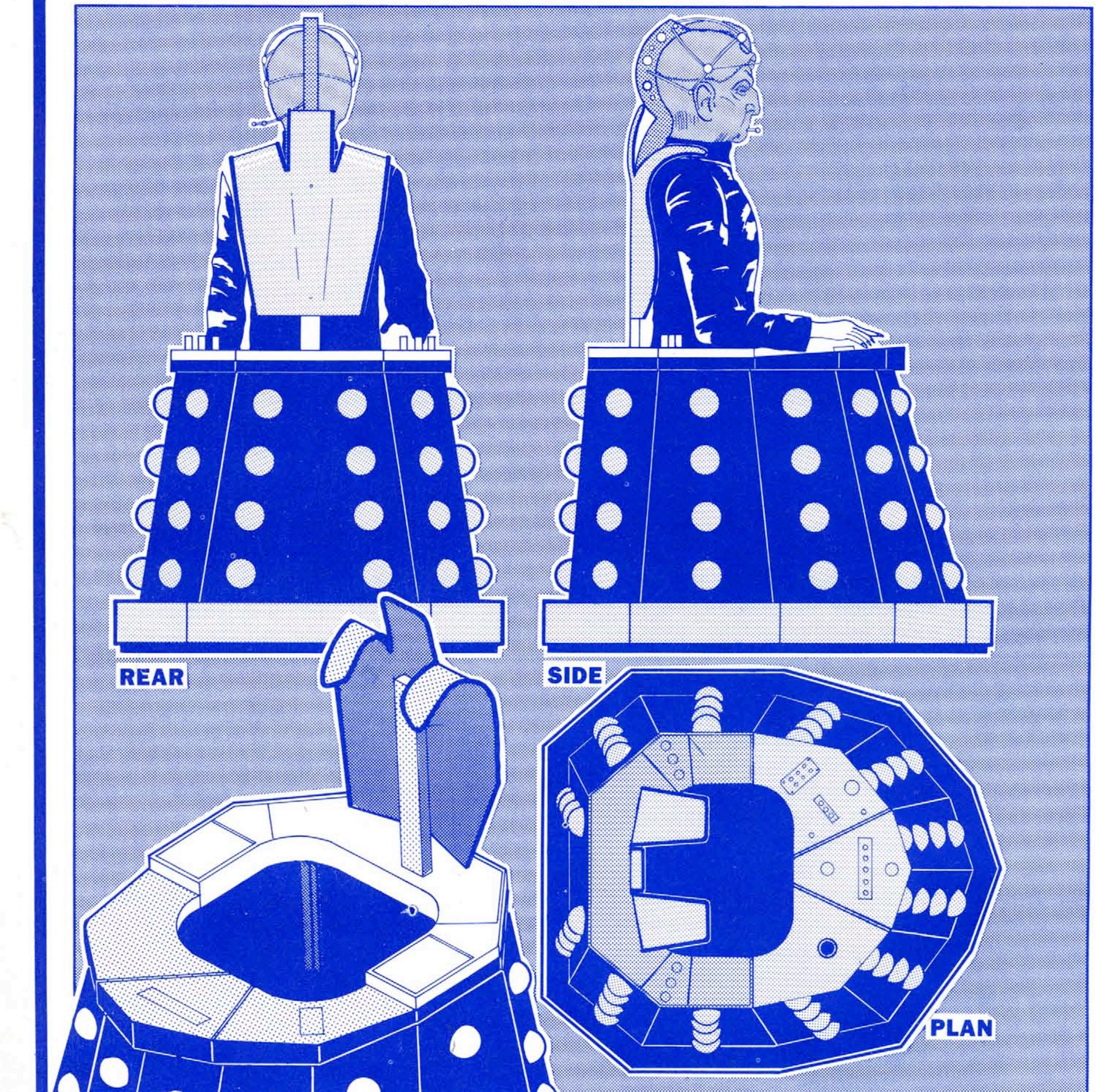
An offensive was launched on the Kaled city and, having wiped out all but a handful of Kaleds, the Thals were themselves almost totally destroyed by a taskforce of twenty prototype Daleks.

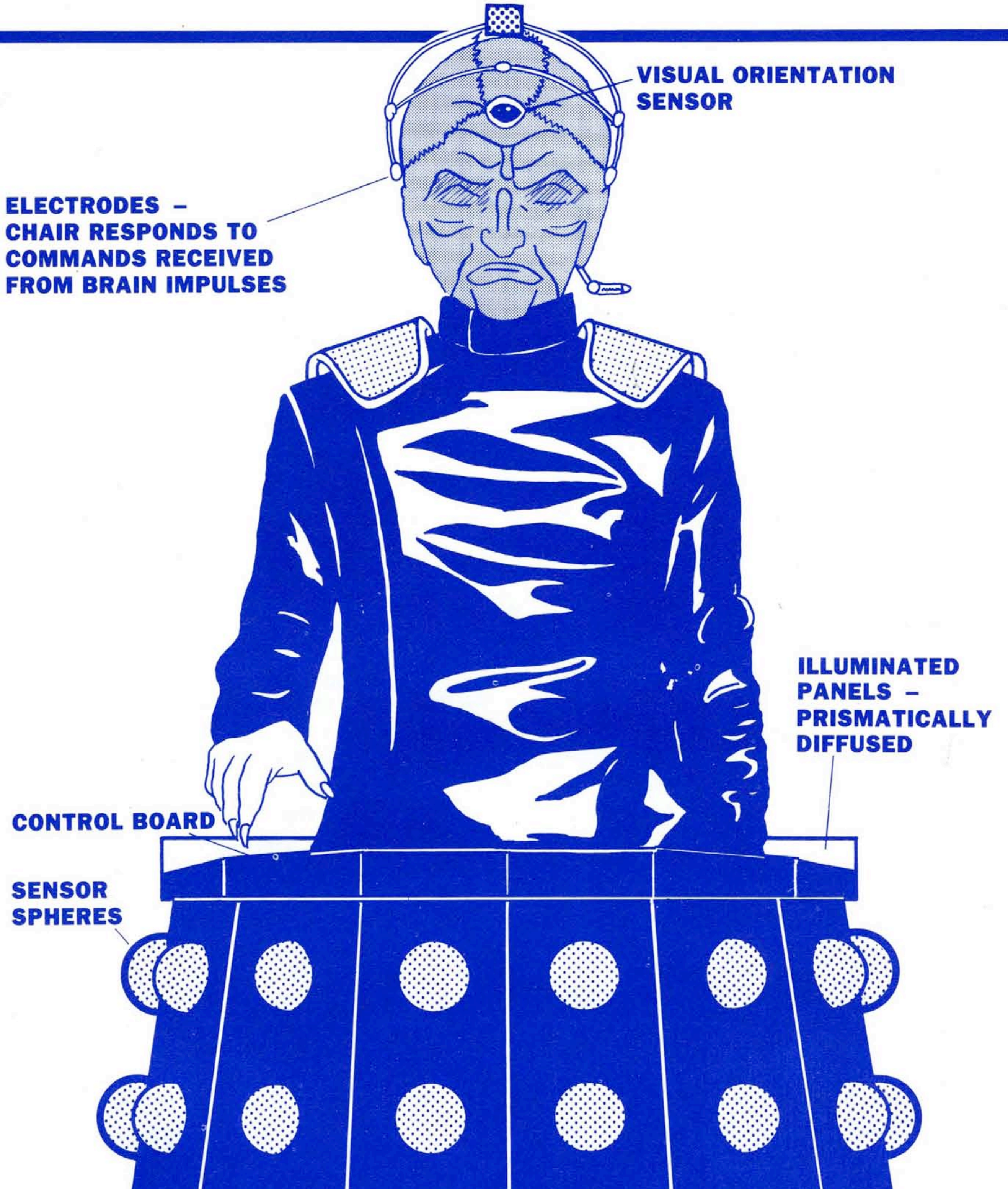
When the Daleks returned from their mass extermination of the Thals, Davros found that he could no longer control them. He himself had genetically engineered them to believe unquestioningly in Dalek supremacy. They could not possibly take orders from him, as they considered him to be an inferior life-form. Davros tried in vain to regain control but learned to his cost that they could not be reasoned with. They opened fire on him and Davros appeared to be exterminated by his own creation.

The Doctor, meanwhile, had managed to blow up the Incubator Room. Although he had not been entirely successful in his mission to destroy the Daleks, he had brought about a major setback in their development. On leaving Skaro all he could hope for was that he had altered the course of Dalek history and averted ultimate disaster.

Before long, however, the assembly lines were started up and the manufacture of the most evil and malevolent force in the cosmos began.

DAVROS

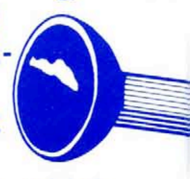

REAR
SIDE
PLAN
0
20
40
60
CENTIMETRES


VISUAL ORIENTATION SENSOR
ELECTRODES – CHAIR RESPONDS TO COMMANDS RECEIVED FROM BRAIN IMPULSES
ILLUMINATED PANELS – PRISMATICALLY DIFFUSED
CONTROL BOARD
SENSOR SPHERES

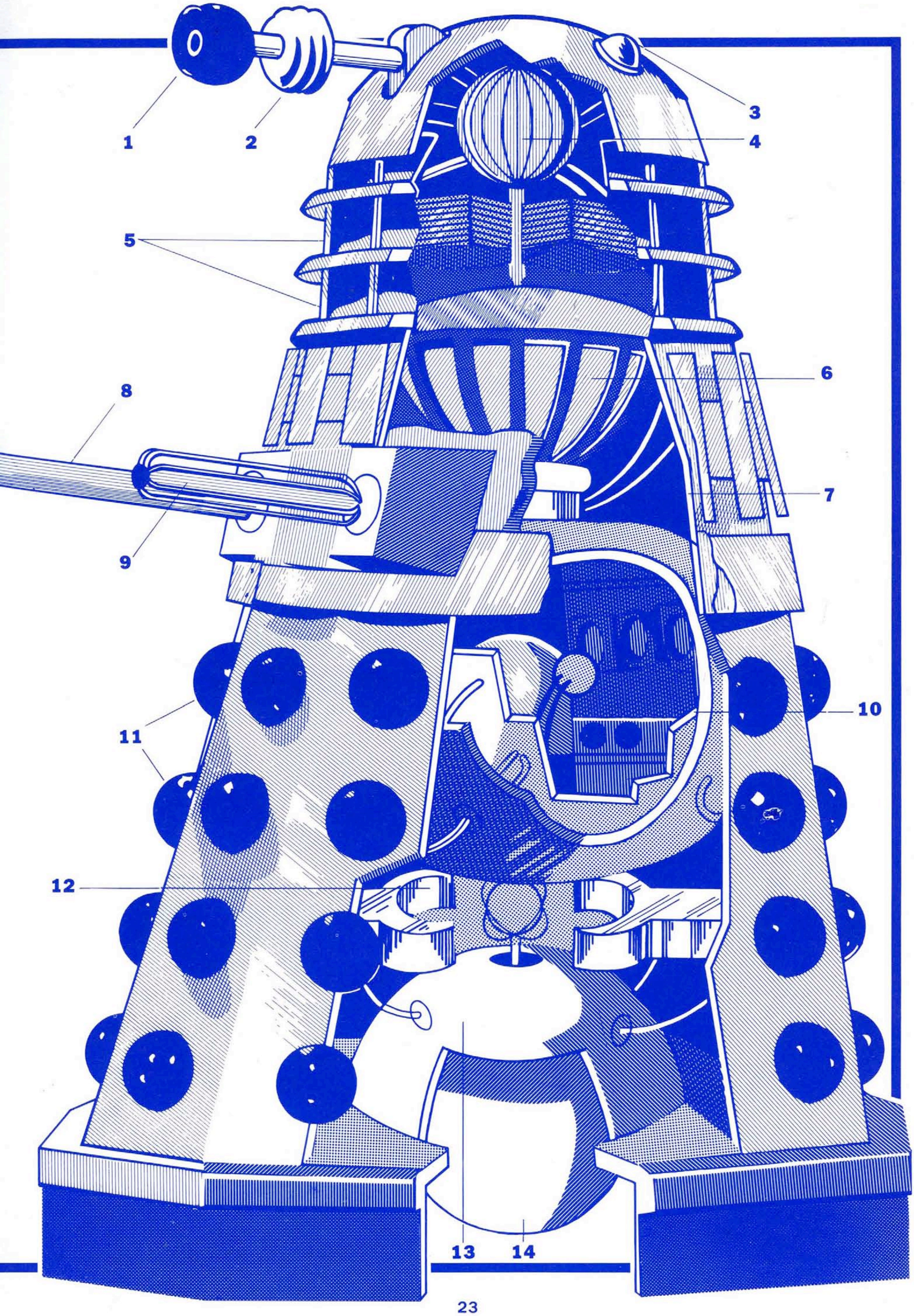
ANATOMY OF A DALEK

KEY TO ILLUSTRATION

1. **THE EYE** – This incorporates a wide-angle lens which transmits images to a screen within the control chamber. It is mounted on a pivoting arm which protrudes from the Dalek's head section. The head is capable of turning a full 360° providing the Kaled with complete all-round vision.
2. **INSULATORS** – These discs, behind the eye lens, protect the delicate 'eye nerve' mechanism from the harmful effects of cosmic rays. These are essential when the Dalek is in space flight.
3. **ENERGY DISPENSERS** – Housed in the head section, these dissipate any excess energy which often builds up in Dalek cells. Acting like safety valves, they release the energy in the form of red heat and supersonic squeals, beyond the range of human hearing.
4. **TRANSLATOR UNIT** – Daleks have no vocal chords so this unit amplifies the Kaled's thoughts into speech patterns acceptable to the listener's brain. This process is reversed when the Dalek is spoken to.
5. **SUPER-SENSITIVE RECORDING SCREENS** – All light and sound waves are picked up by these photosonic screens and transmitted through a computer to a network of recording cells.
6. **THE WAR COMPUTER** – A memory bank in which the Dalek stores its war knowledge, containing every fighting manoeuvre, or dangerous situation, known to Daleks. It can select a course of action in microseconds.
7. **THE OUTER CASING** – This is made of Dalekenium, a metal alloy developed by Davros, which is ten times stronger than steel, yet it is only a quarter of the weight of aluminium.
8. **THE MANIPULATOR ARM** – This provides the Dalek with considerable manual dexterity. The suction cup produces a tremendously powerful vacuum. This, together with the hydraulic strength of the telescopic arm enables the Dalek to lift enormously heavy weights. It can be replaced by various other attachments.
9. **BLAST-GUN** – The Dalek is armed with a blast-gun, located at the front of the mid-section to the left of the manipulator. The blast-gun moves on a ball and socket arrangement and is connected to a dynamic unit within the casing, which provides it with its power. The gun produces electrical discharges which are similar in intensity to a bolt of lightning.

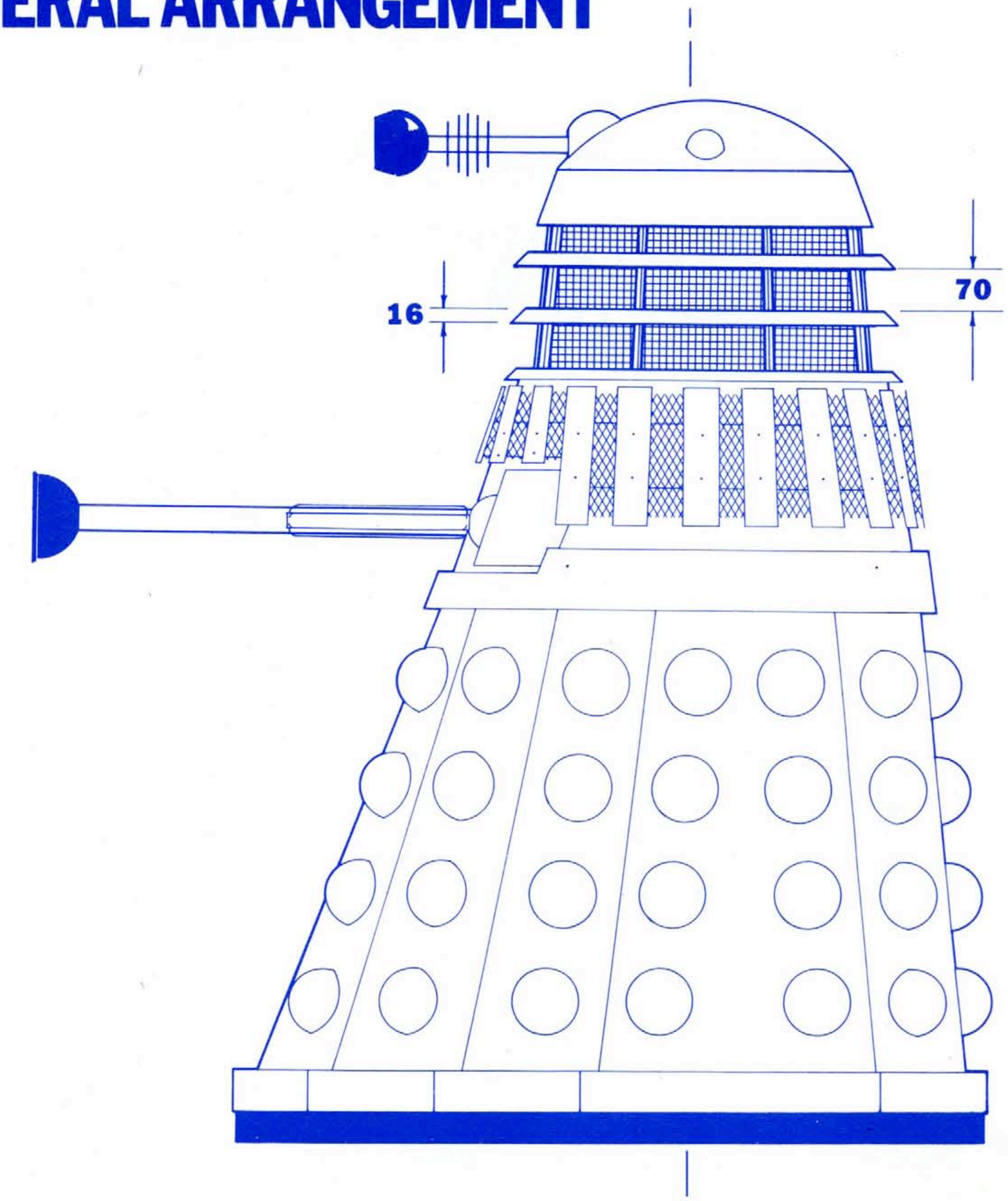


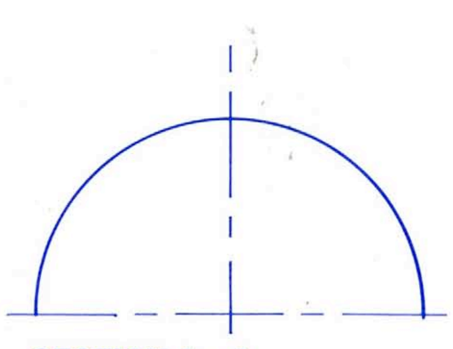
10. **THE CONTROL CHAMBER** – This is the very 'heart' of the machine. From here all screens, controls and instruments are operated by the Kaled mutant.
11. **SENSE GLOBES** – Fifty-two of these are positioned around the Dalek's lower casing. These globes react to changes in external conditions and relay data on temperature, humidity, movement and the presence of animal life to the control chamber for analysis.
12. **THE GRAVITY COMPENSATOR** – This compensates for relative changes in external G-forces, ensuring that the gravitational forces acting on the Kaled mutant are kept constant.
13. **THE ATTRACTAVON** – This can compensate for any angle of movement.
14. **MOTIVE POWER SOURCE** – This large metal bearing rotates the Dalek and can change direction easily at any speed. On the planet Skaro, all floors are metal and charged with electricity. The motive bearing picks up current, transmits it to the energy cells at its centre and converts it into motive power.

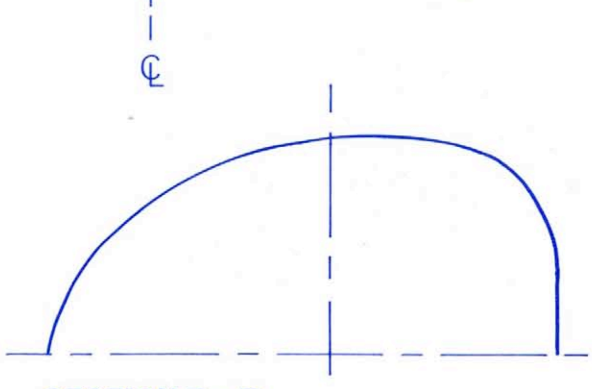

1
2
3
4
5
6
8
7
9
10
11
12
13
14

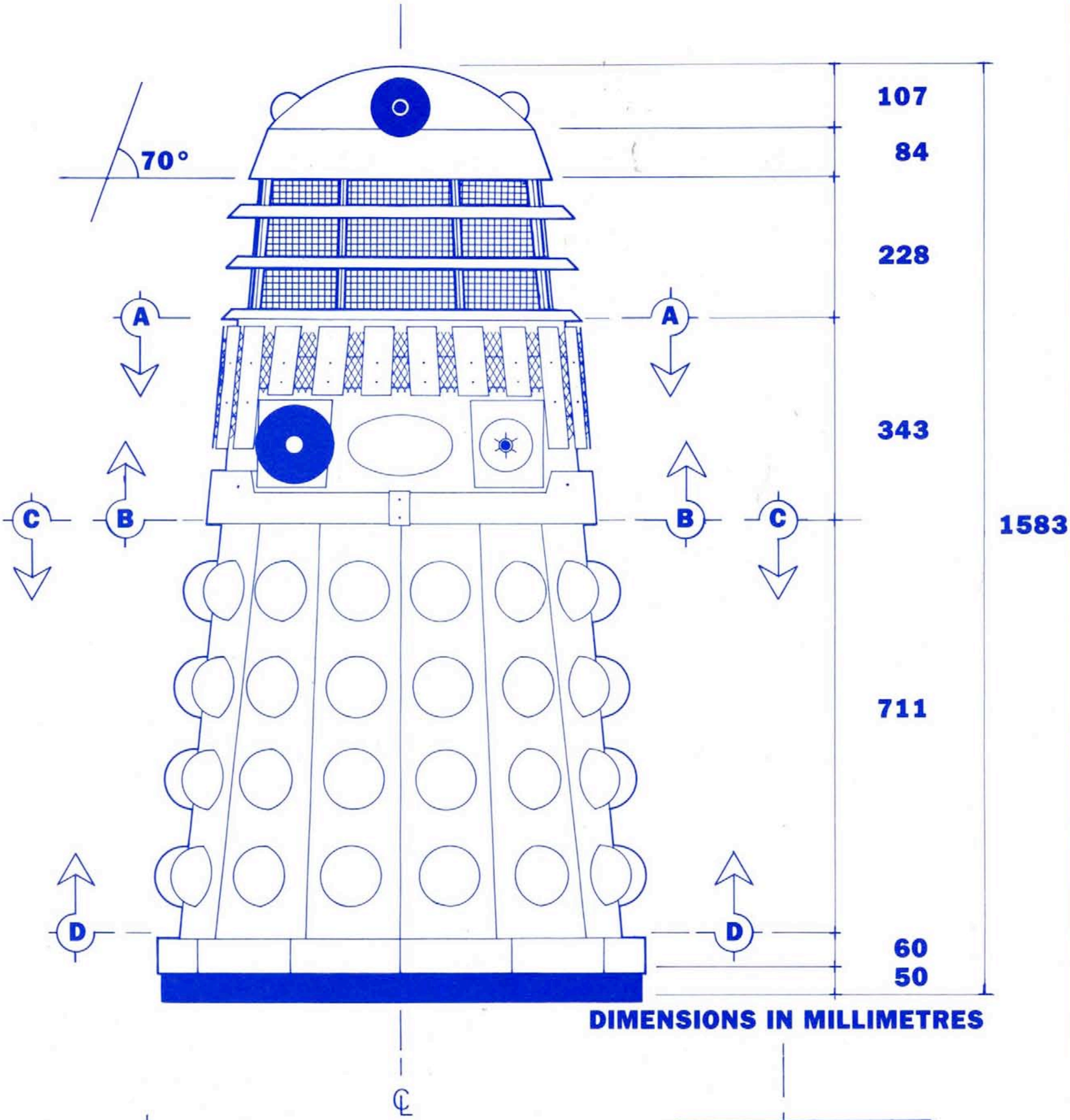
DALEK

GENERAL ARRANGEMENT

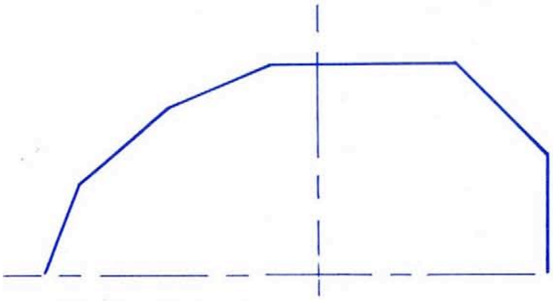



SECTION A – A

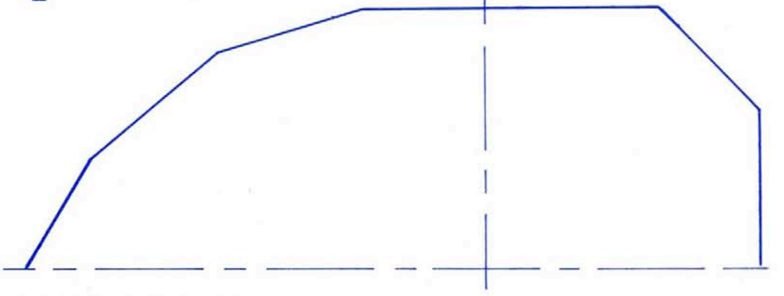

SECTION B – B


70°
107
84
228
343
711
60
50
1583
A
A
B
B
C
C
D
D
℄

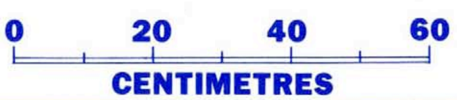
DIMENSIONS IN MILLIMETRES



SECTION C – C

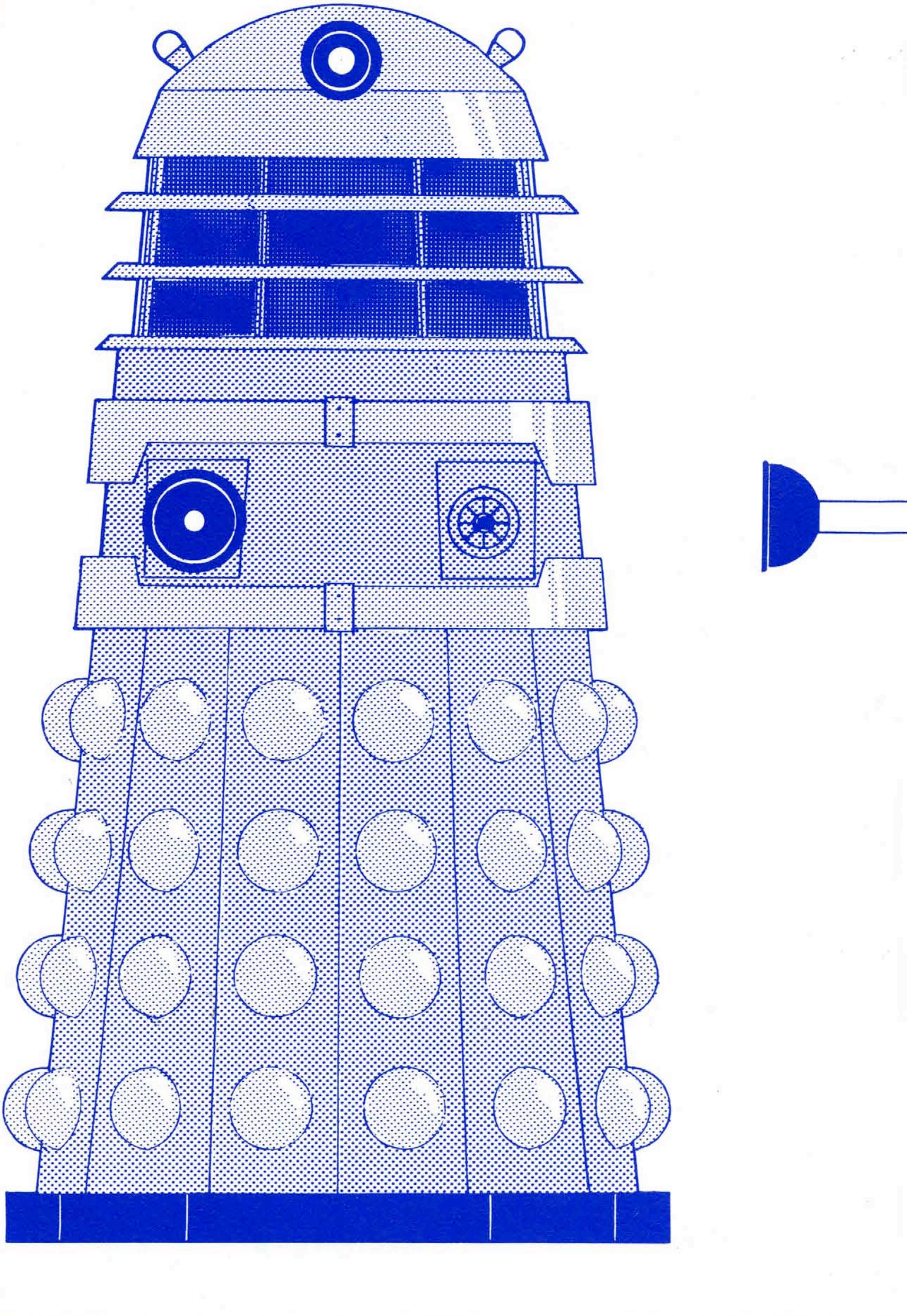


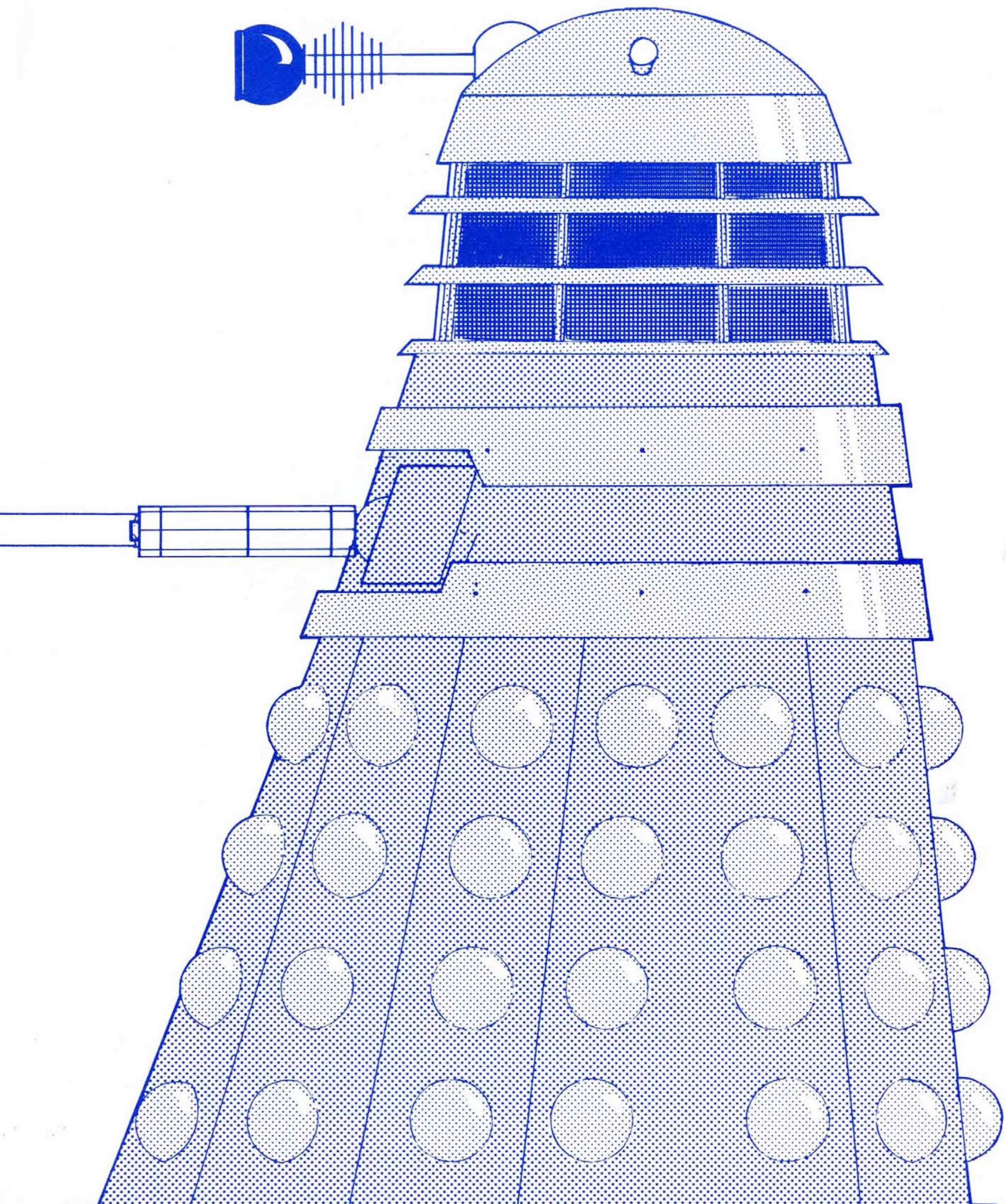
SECTION D – D


0
20
40
60
CENTIMETRES

DALEKS

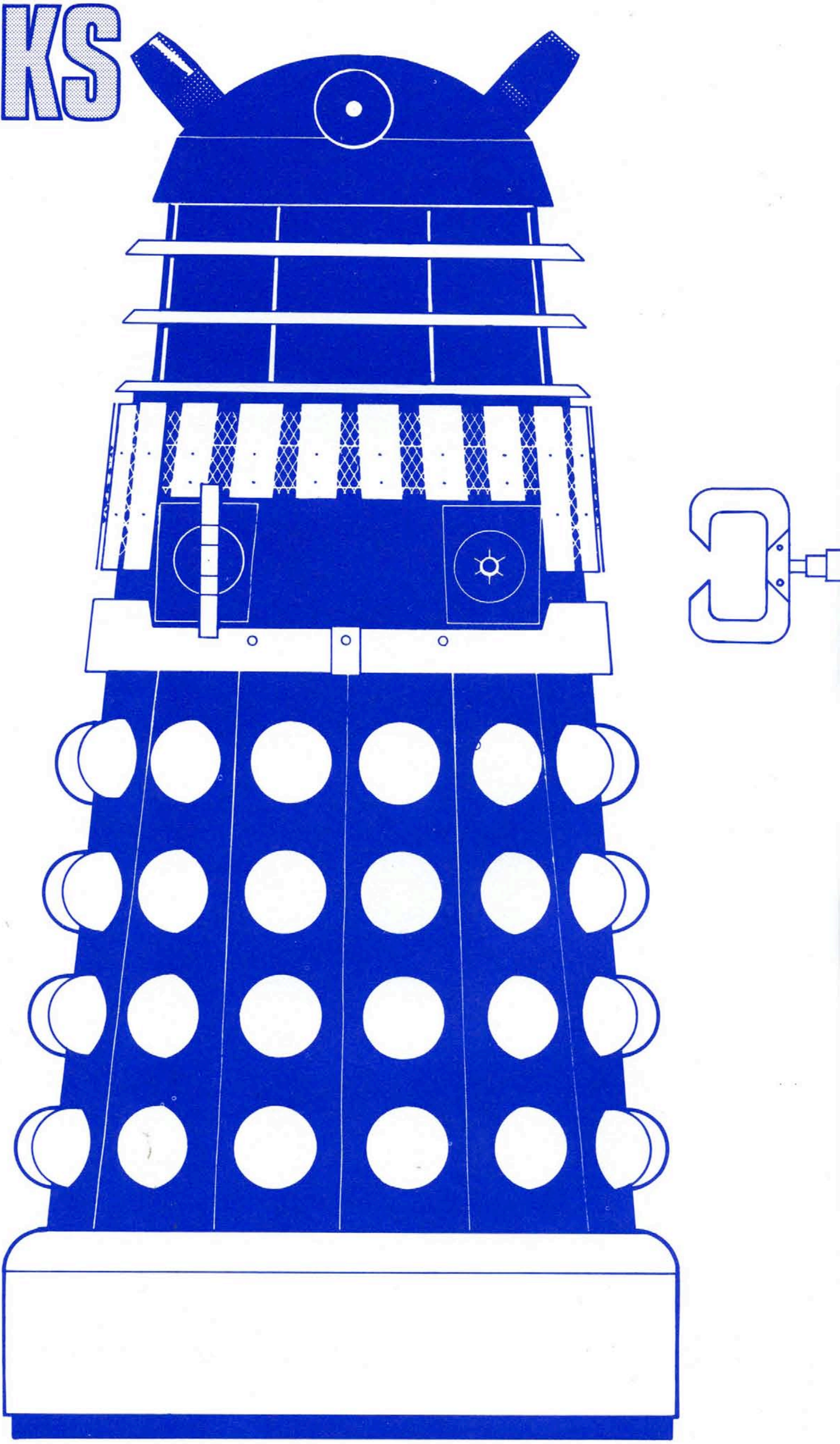
TYPE I

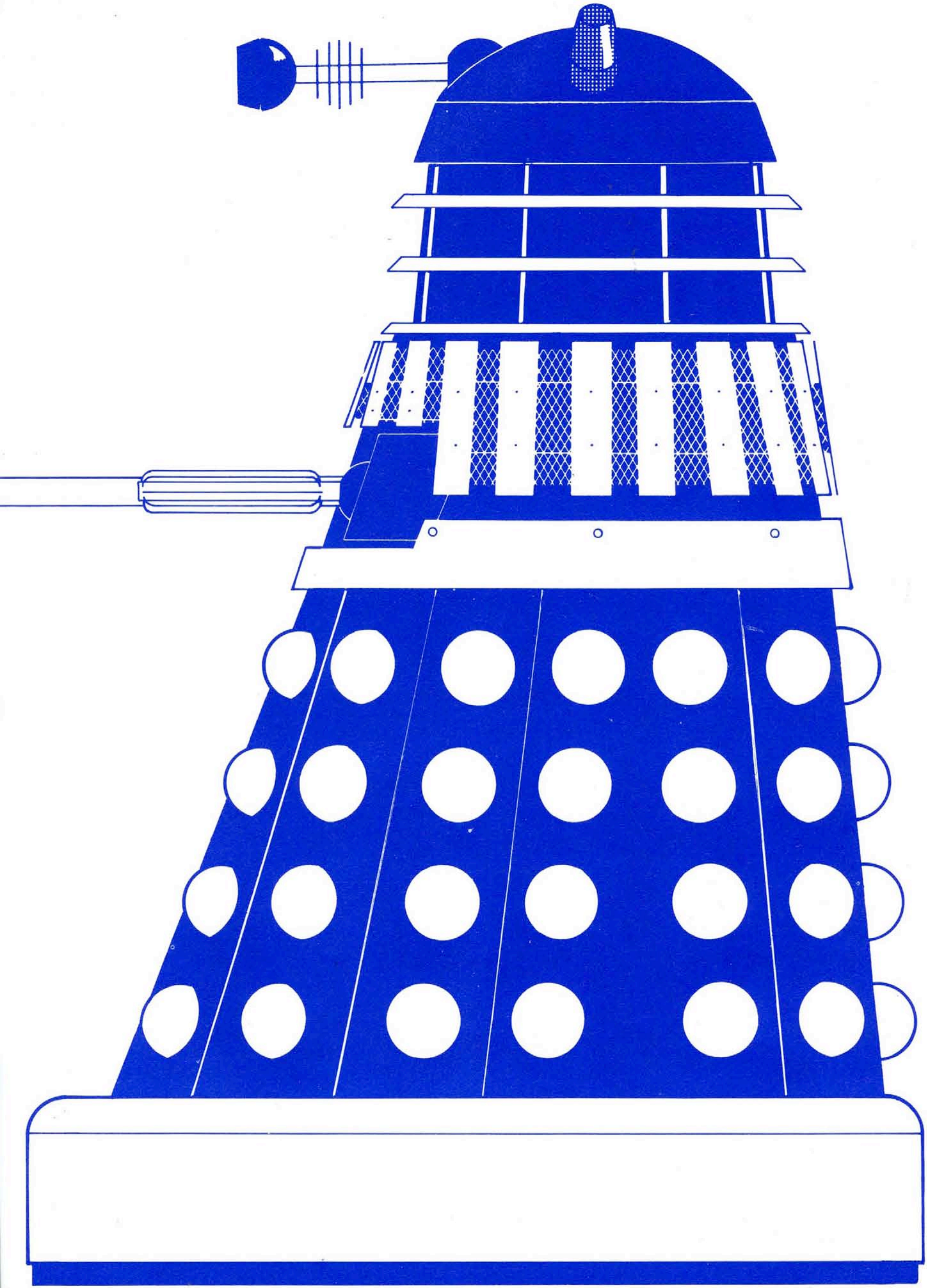




DALEKS

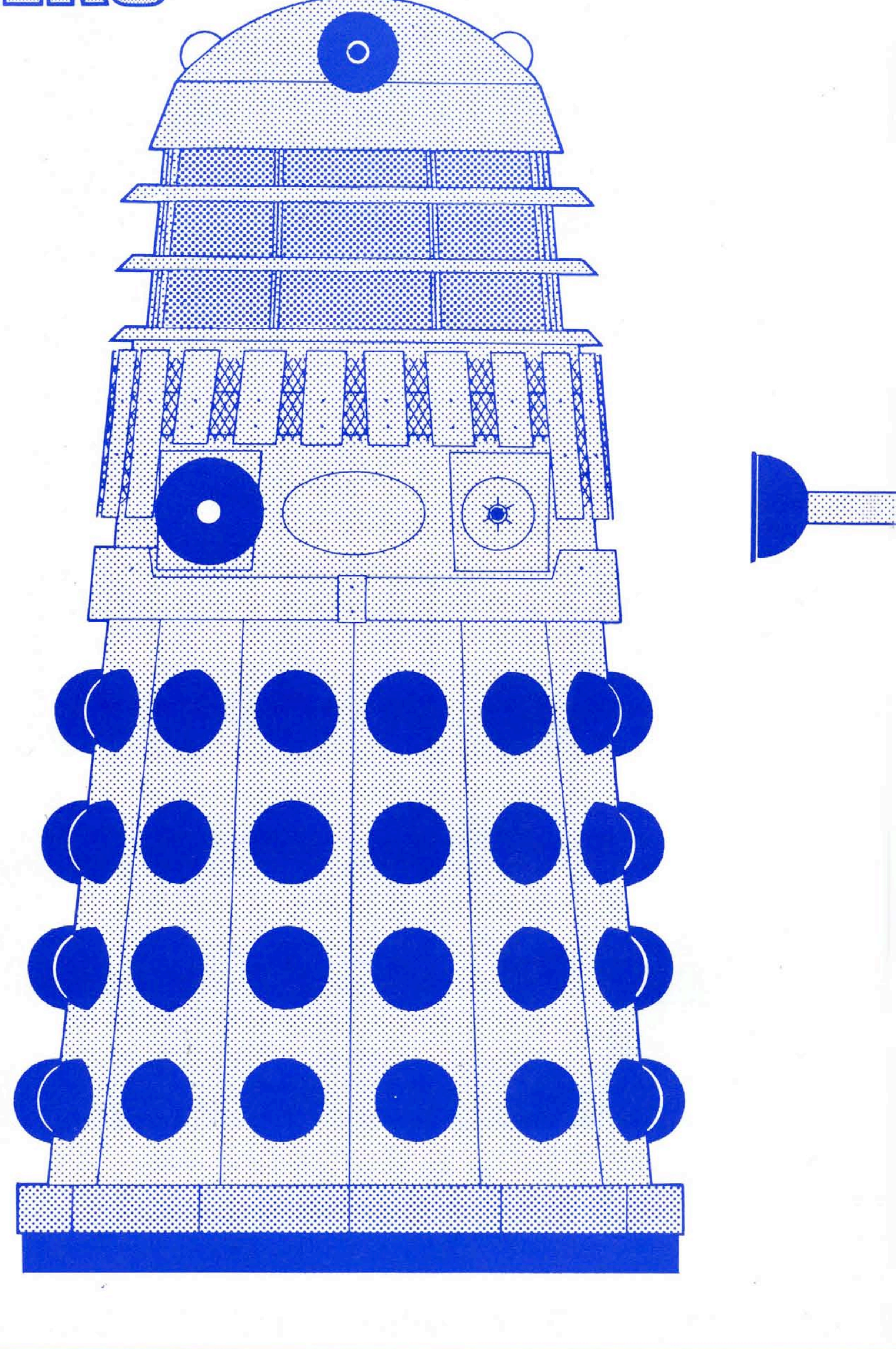
TYPE III

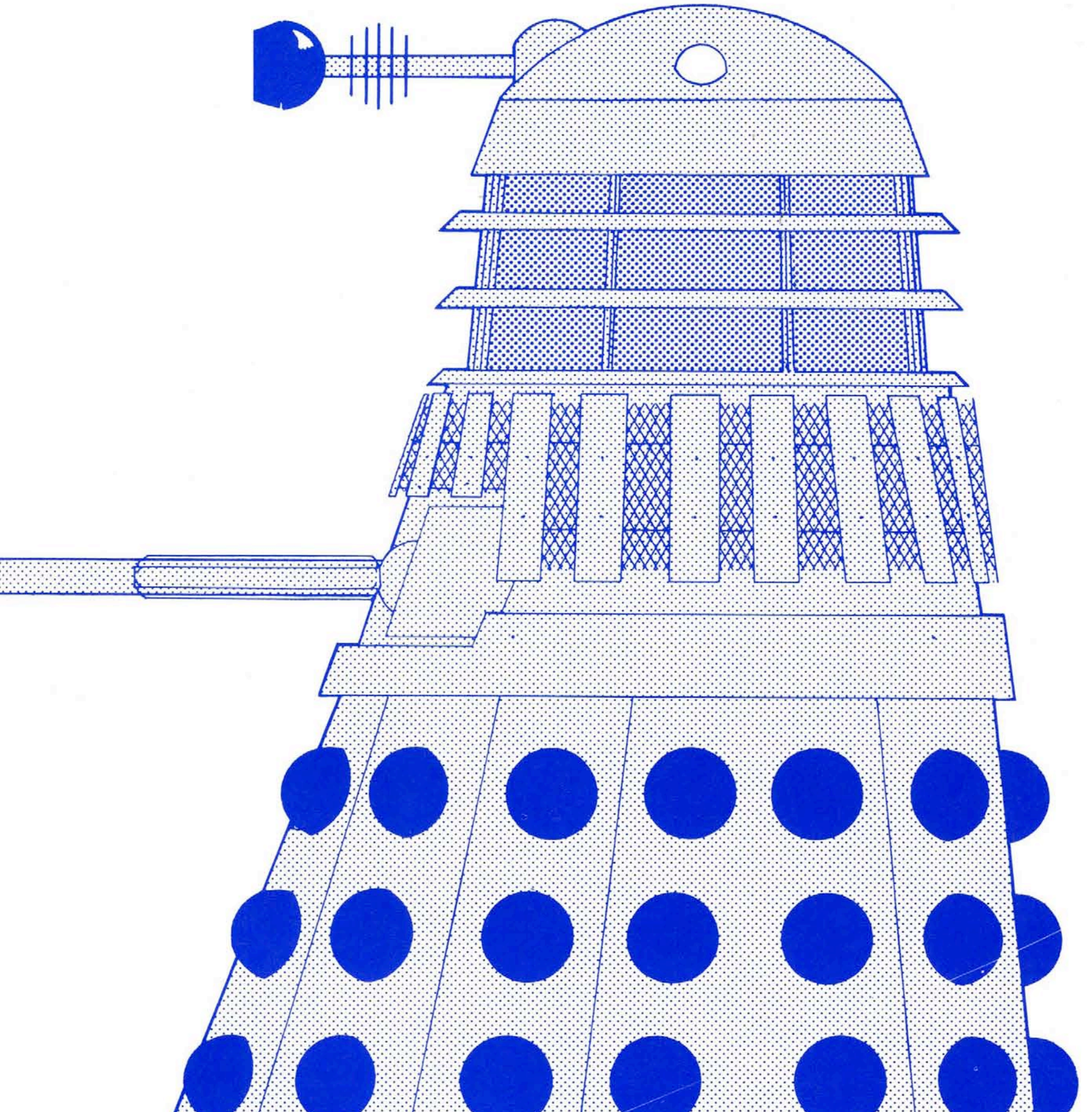




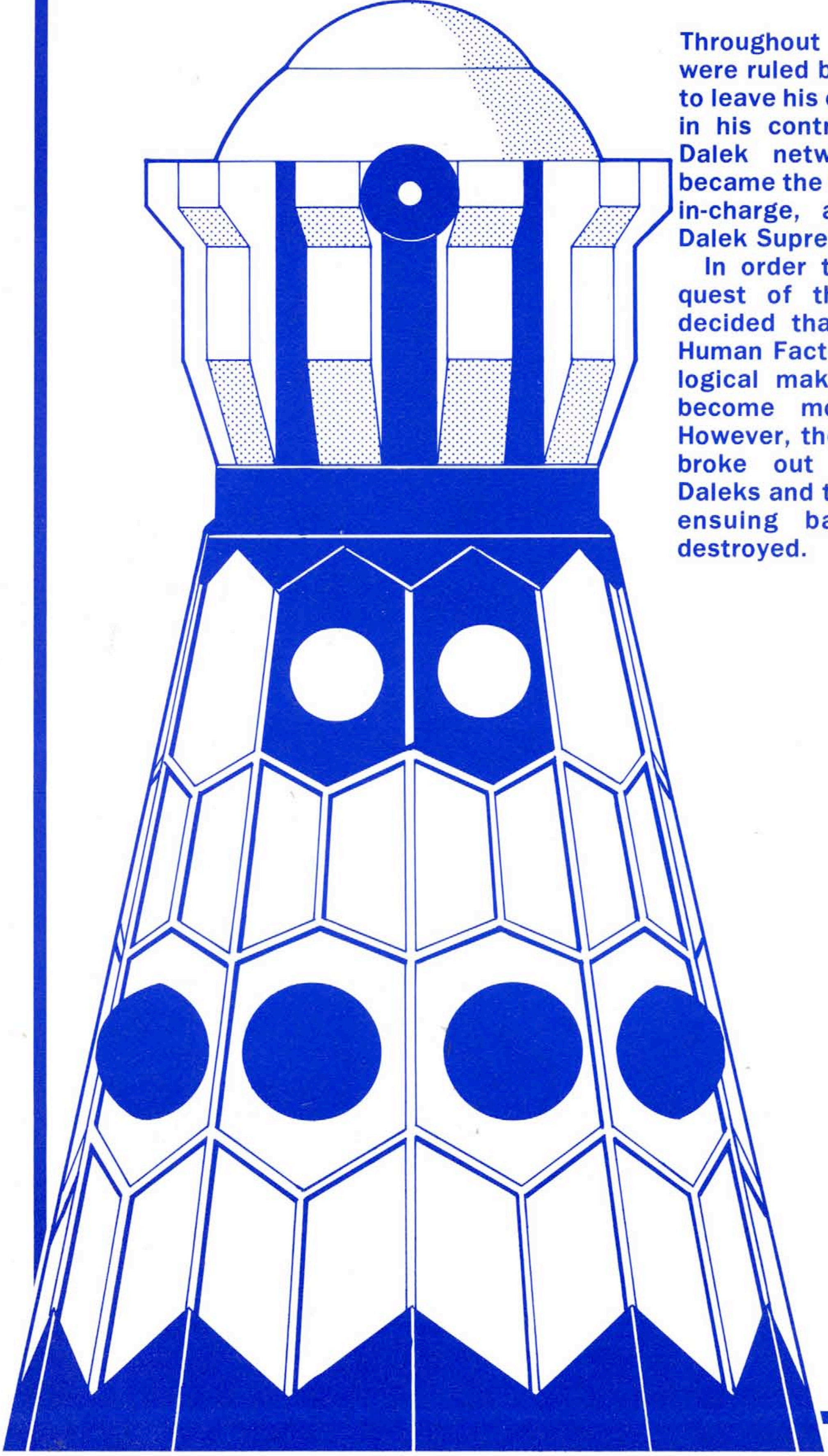
DALEKS

TYPE V





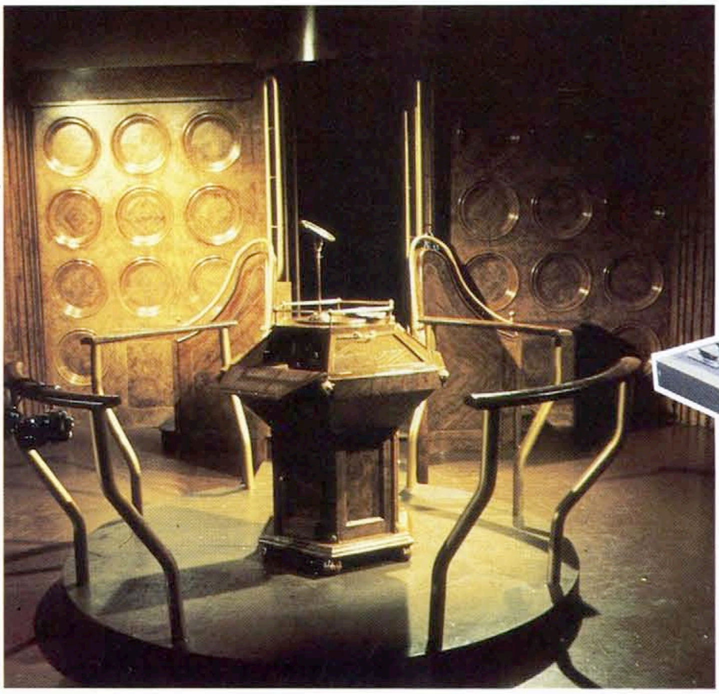
EMPEROR
DALEK

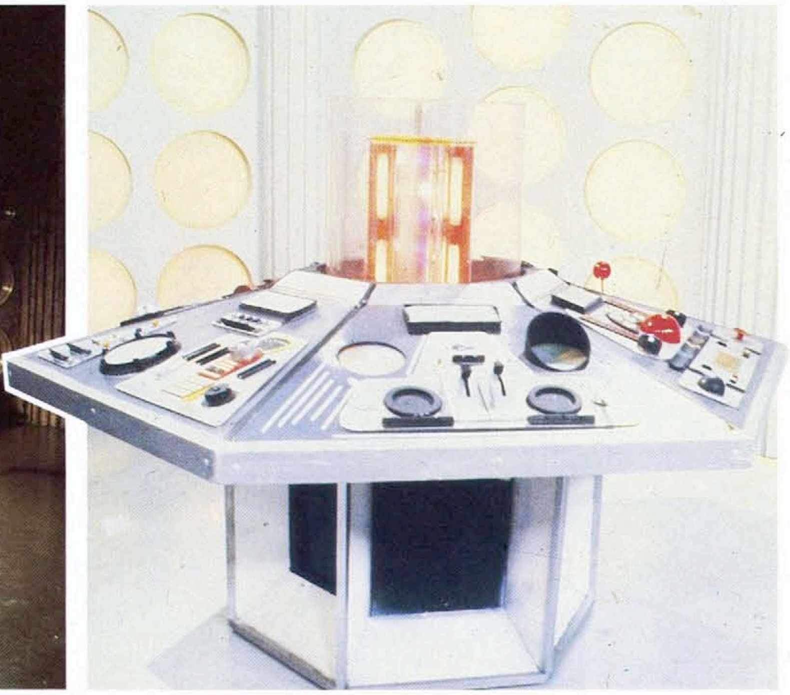


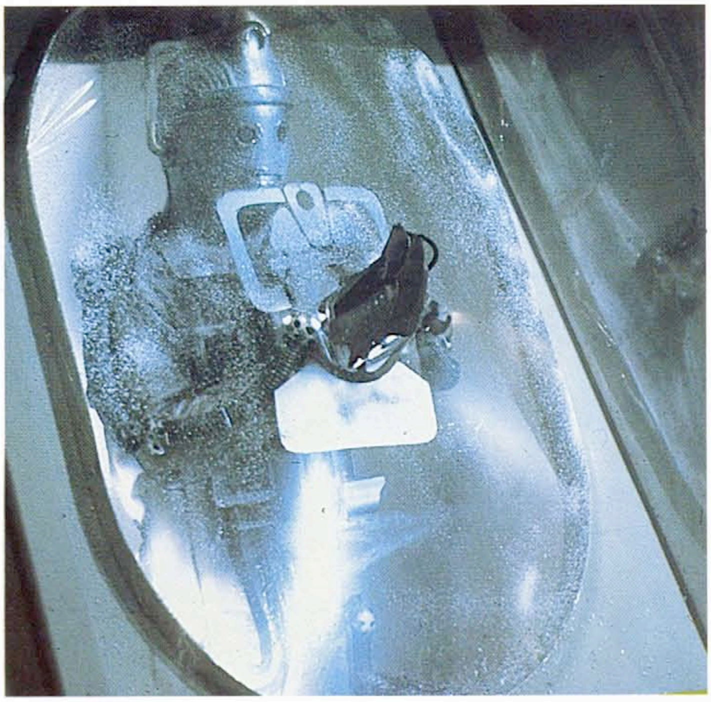
Throughout Dalek history, the Daleks were ruled by an Emperor Dalek, unable to leave his chamber. He stood immobile in his control chamber, linked to the Dalek network by cables. He thus became the Dalek nerve centre. Second-in-charge, and fully mobile, was the Dalek Supreme, the only black Dalek.

In order to expedite the Dalek conquest of the Universe, the Emperor decided that the introduction of 'The Human Factor' into the Daleks' psychological make-up would allow them to become more cunning and deadly. However, the plan failed and a civil war broke out between the humanised Daleks and the original ones. During the ensuing battle, the Emperor was destroyed.

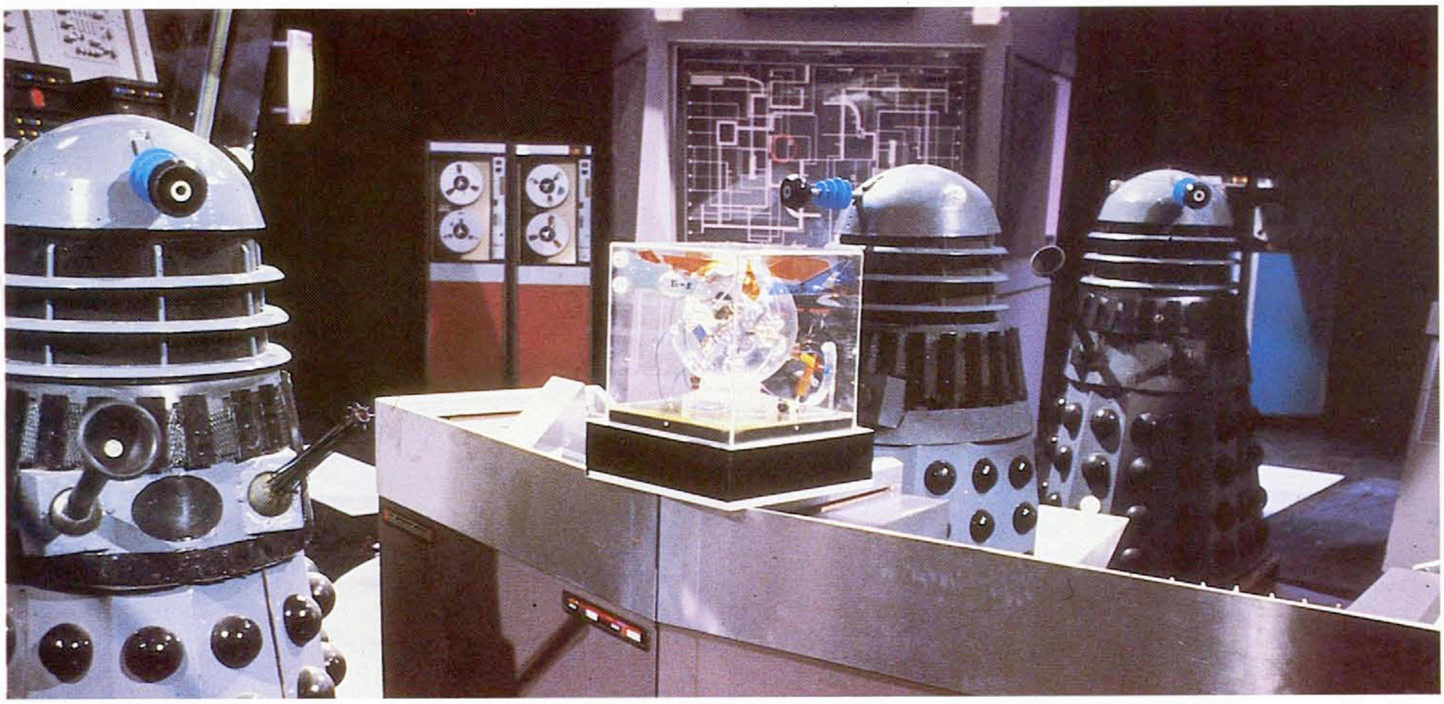
WVO 2M







K·9



K-9

MOBILE SELF~POWERED COMPUTER

The man responsible for the design and construction of K-9 was Professor Marius of the New Heidelberg University.

In the year 5000 AD Marius accepted a position at the Bi-Al Foundation, a research establishment based on the very edge of the Solar System. Bi-Al was looking into the new dangers and diseases which might threaten the human race in deep space.

While preparing to embark on his journey, the professor discovered that weight restrictions would prevent him taking his pet dog with him. Upset at this, Marius requested permission to construct a mobile computer to assist with his experiments, which he designed in the form of a dog. Thus K-9 was born – a fully self-contained, mobile computer unit with defensive capabilities and built-in speech circuitry.

The Doctor, meanwhile, had been brought to the foundation by his then companion, Leela. He had contracted an intelligent virus, one that took over the minds and bodies of its hosts in order to use them for its own ends. Marius, together with K-9, developed an antidote to the virus and the Doctor was saved. Before the Doctor and Leela left in the TARDIS, Marius offered K-9 to them. Although he had become very attached to his computerised pet, he was about to return to Earth and due, of course, to the same weight restrictions, was unable to take K-9 back with him.

Before the Doctor could give his answer the computerised dog was already inside the TARDIS: his enquiring computer brain had got the better of him. After a number of adventures, Leela decided to stay on Gallifrey with the commander Andred, with whom she had fallen in love. K-9 offered to stay with her, but although Leela was enthralled at the idea of K-9 as a pet, the Doctor was dubious at first. However, K-9 was very keen to remain with her. How could he resist the vast knowledge stored by the Time Lords on Gallifrey?

The Doctor then built his own computer dog, K-9 Mk 2. Externally an exact replica of the first, he had several internal modifications – a more durable power-source, improved tracking circuits and a new multi-phase blaster built into his nose.

K-9 remained with the Doctor until the time that the TARDIS was hijacked by Biroc, a time-sensitive Tharil. The TARDIS had passed through a charged-vacuum emboitment into E space*, and it was there that it found the Tharils.

Once the rulers of a vast empire, they had now become the slaves of the Gundans who had captured them. They were being held in the hold of an enormous Gundan ship which was determined to blast its way out of E-space.

K-9, together with the Time Lady Romanadvoratrelundar (Romana), was captured, but later freed by the Tharil named Lazlo. The spaceship attempted to escape from E-space, but the back-blast shattered its hull, releasing the imprisoned Tharils and catapulting the TARDIS together with the Doctor into N-space (normal). Although partially destroyed in the blast K-9 was repaired and elected to remain in E-space with Romana, there to help the Tharils fight slavery.

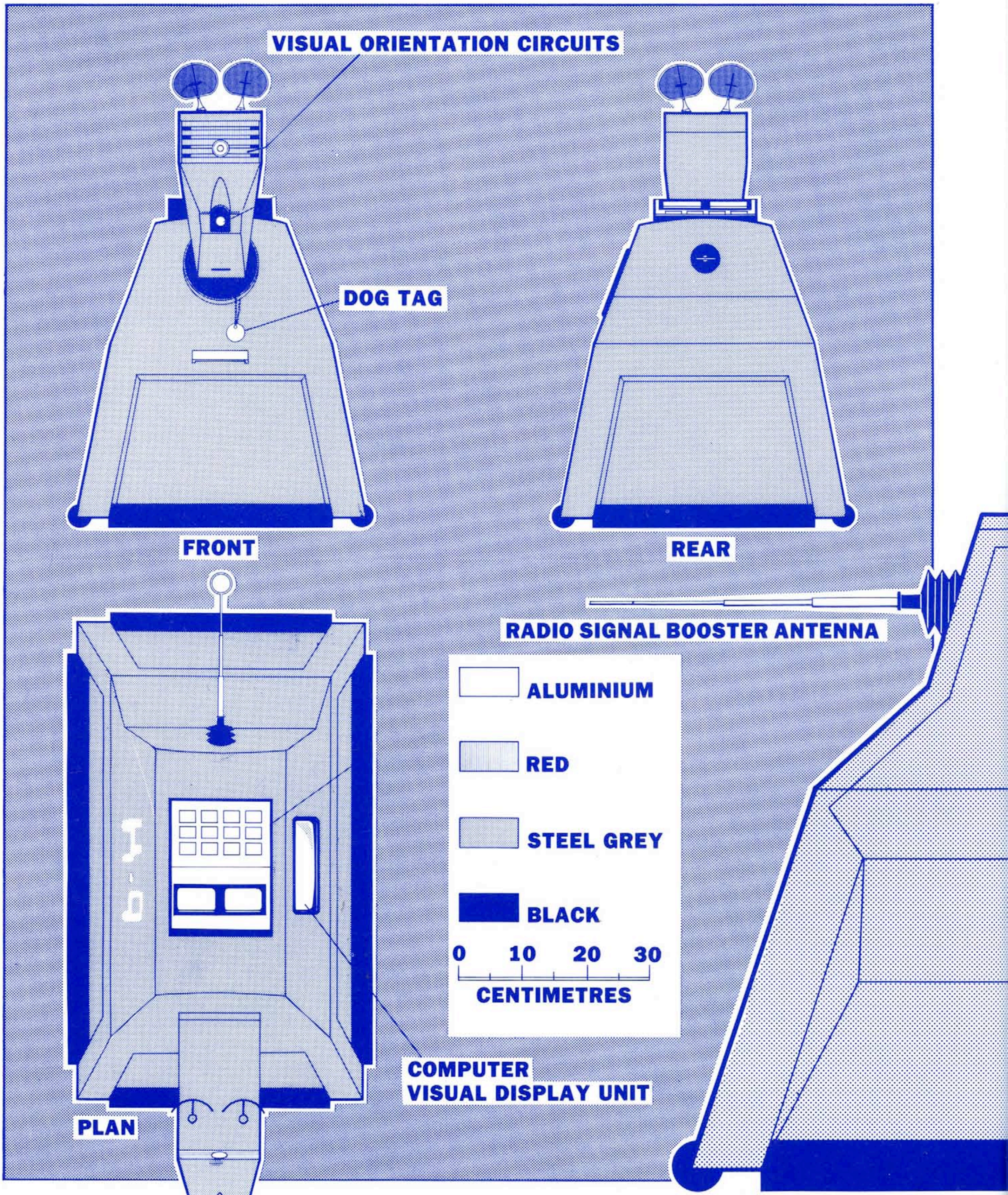
The Doctor also built a K-9 Mk 3 which he left on earth as a present for his former companion Sarah Jane Smith. This version of K-9 was instrumental in the rounding-up of a witches' coven at Moreton-Harwood.

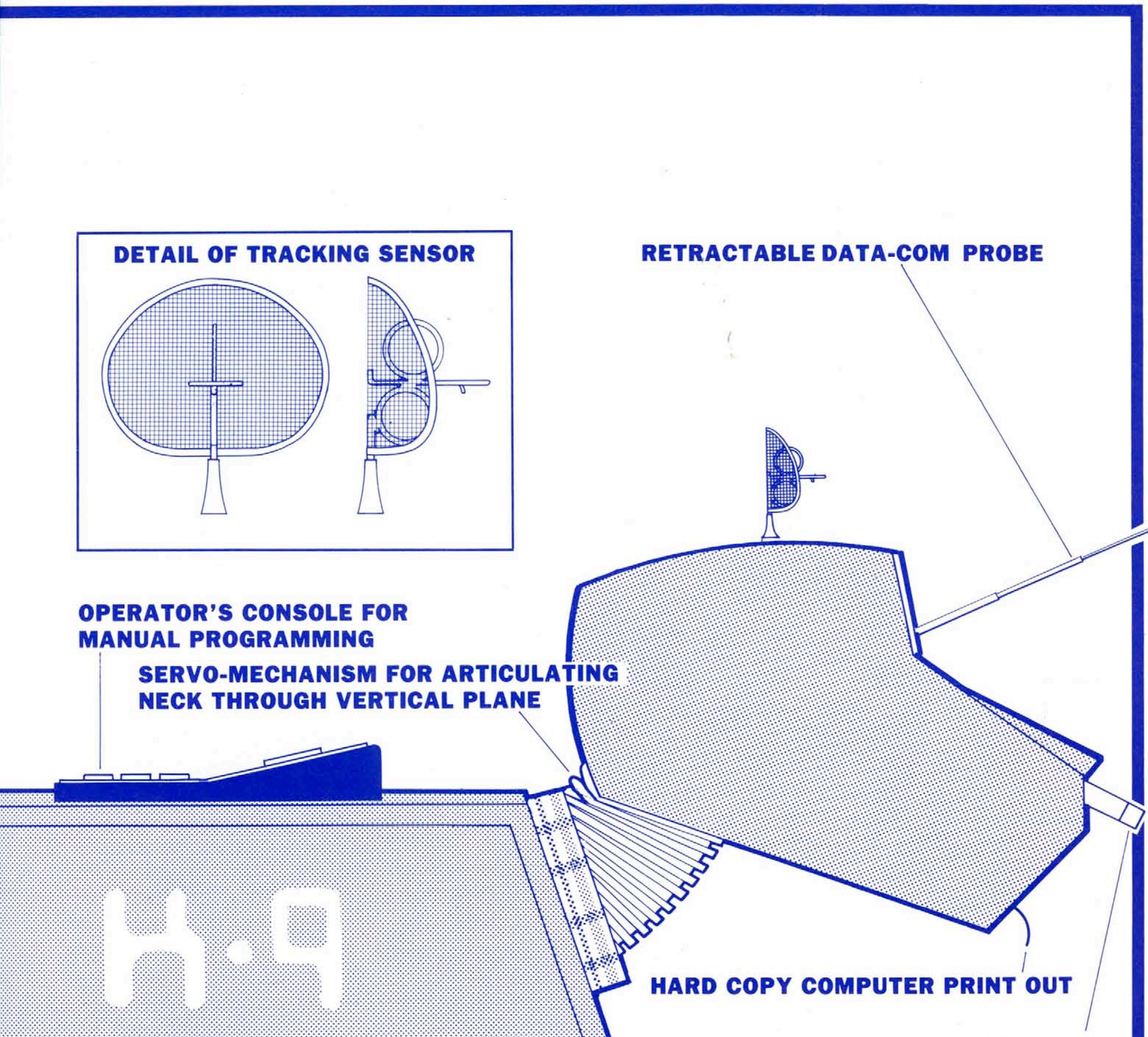
---

* E-space or Exo-space. A small universe beyond the charged-vacuum emboitment.

K-9

MOBILE SELF~POWERED COMPUTER


VISUAL ORIENTATION CIRCUITS
DOG TAG
FRONT
REAR
RADIO SIGNAL BOOSTER ANTENNA
ALUMINIUM
RED
STEEL GREY
BLACK
0 10 20 30
CENTIMETRES
K-9
COMPUTER VISUAL DISPLAY UNIT
PLAN


DETAIL OF TRACKING SENSOR
RETRACTABLE DATA-COM PROBE
OPERATOR'S CONSOLE FOR MANUAL PROGRAMMING
SERVO-MECHANISM FOR ARTICULATING NECK THROUGH VERTICAL PLANE
K·9
HARD COPY COMPUTER PRINT OUT
PHOTON BLASTER – STUN, BLAST, DEMATERIALISE

THE CYBERMEN

The story of the Cybermen goes back many aeons, to a time when the solar system had only just been created. In those days Earth had a sister planet – Mondas. But soon the great intergalactic forces of that period broke Mondas free of its orbit and it drifted away from the solar system into deep space.

Organic life on both worlds developed in much the same way, but on Mondas circumstances made survival for the people of the rogue planet much more difficult. After many centuries, they began to realise that their life-spans were shortening and their bodies becoming weaker. It was clear that unless they could do something to reverse this, their entire race faced extinction.

In their efforts to preserve the species, the doctors and scientists of Mondas made many experiments in the fields of bionic and cybernetic engineering. They learned how to replace diseased organs with synthetic apparatus, capable of performing the functions of the original perfectly. As their replacement technology advanced, they were able to exchange entire limbs for prosthetic devices which performed better than the original flesh and blood.

Generations later, it had become quite normal for people to have cybernetic limbs. Cyber-technology provided them with legs which were faster, arms which were stronger and hands which were much more dexterous.

The people of Mondas were no longer concerned merely with surviving – they were striving to achieve physical perfection. In their attempts to free themselves of all weakness, they decided to erase emotion from their brains, their only remaining organ made of flesh and blood. Emptied of love, hate, anger, fear or compassion, a new race of beings emerged from Mondas – THE CYBERMEN. Totally logical, even if not actually evil, they would become ruthless in their attempts to achieve their aims.

Having attained physical perfection, they began to look for new goals. They turned their attention to the pursuit of power and the conquest of the Universe.

The scientists of Mondas therefore began to look into the possibilities of space travel and before long had developed short range space vehicles. When Mondas strayed into the Telos system the Cybermen invaded that planet. Telos was taken and many of its inhabitants were converted into Cybermen, and an army of Cybermen was stored on Telos.

It was centuries later, in 1986, that Mondas finally wandered back into this solar system. It was now in truth a dying world. The planet's life force, upon which the Cybermen's existence depended, was diminishing rapidly and in order to save themselves they decided to drain the Earth of its energy.

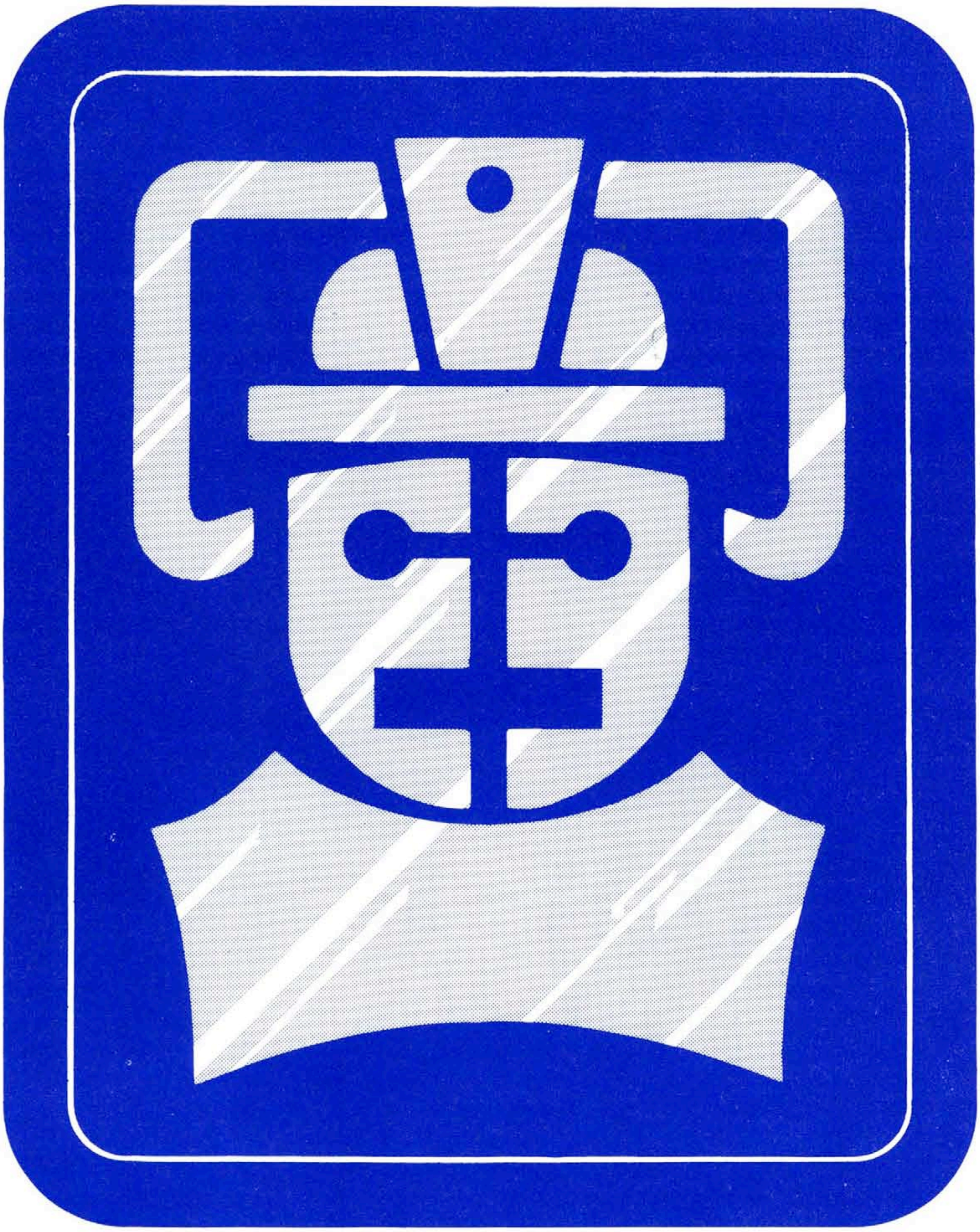
A fleet of Cyber-ships was to remain in orbit around the Earth to deal with any resistance. Meanwhile, one of the landing parties would organise the gathering of the terrestrial energies from the Earth's northern polar ice cap.

The scheme, however, could not succeed. The Cybermen had seriously underestimated the Earth's vast store of energy. The phenomenal influx of power was too much for their planet – Mondas was destroyed, exploding into billions of fragments. Isolated from the energies which maintained their life support systems, until that moment beamed to them from Mondas, the invading Cybermen weakened and died.

By this time, however, the Cybermen of Telos had perfected the techniques of hyperspace travel. This meant that countless galaxies and star systems were now within their grasp. Despite the destruction of Mondas, the Cybermen's reign of terror was only just beginning.

The Telosian Cybermen have attempted to conquer the Earth on a number of occasions. Because they cannot reproduce themselves naturally, they favour planets dominated by humanoid types. There, they can increase their numbers in the only way possible for them – by converting humans into Cybermen.

The typical Cyberman stands about 7



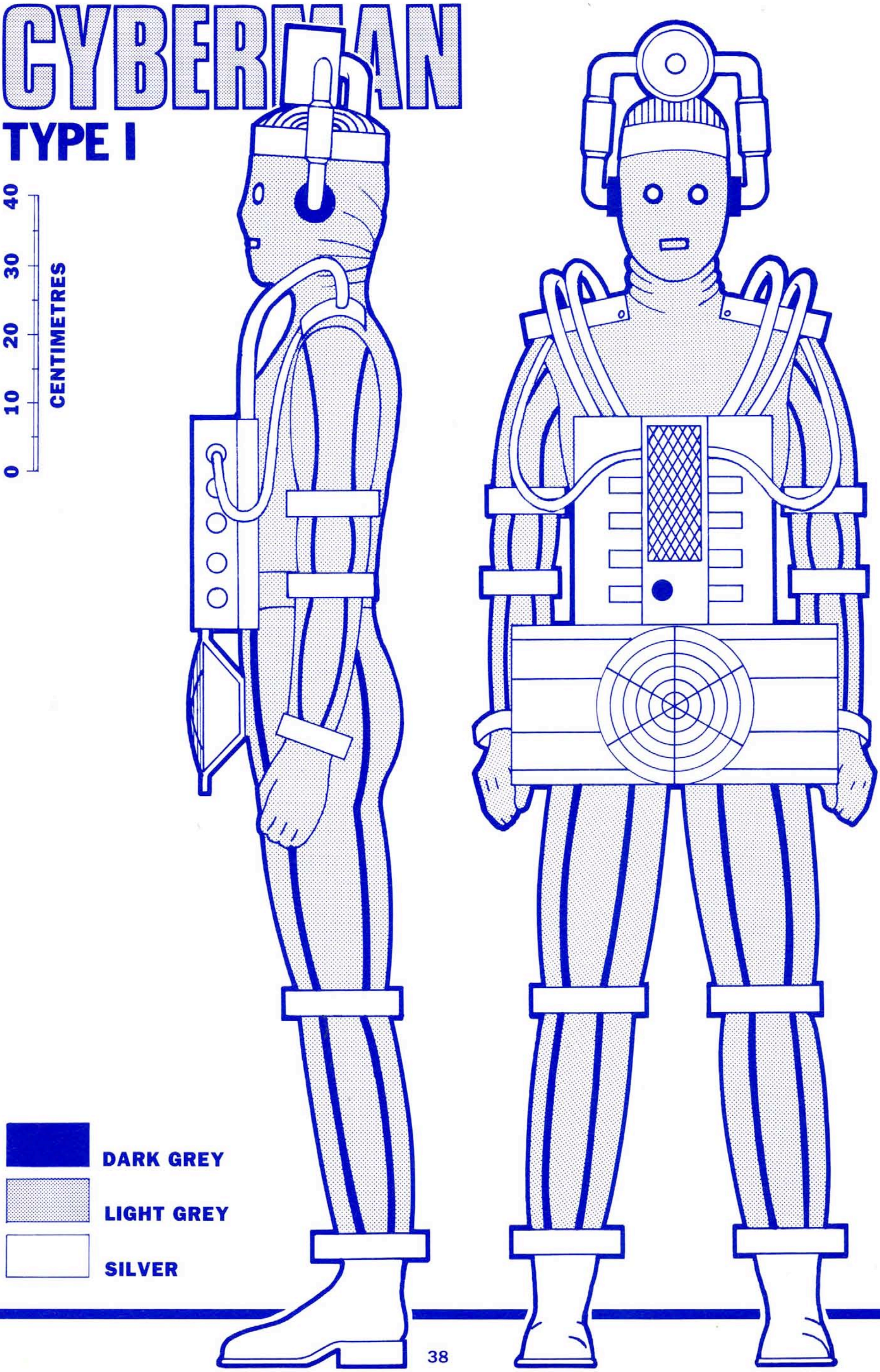
feet tall and has the strength of ten humans. He is immune to the most intense heat and can survive in the vacuum of space. The Cybermen's weapon systems are highly sophisticated. They have also been known to use Cybermats – small metallic 'rodent-like' creatures – for attack and sabotage.

Although almost invulnerable, Cybermen do have weaknesses. For instance, their chest units can easily be 'choked' with gold dust, terminating their life-support systems. It is therefore clear why Cybermen regard gold as a major problem, and why they made such a determined attempt to destroy Voga, the legendary 'Planet of Gold'. Fortunately their plan was frustrated by the Doctor.

Great advances in Cyber-technology are however being made all the time. It cannot be long before the Cybermen are an invincible force. Humanity's only hope then will be inter-planetary unity, a galactic alliance to combat the Cybernetic invaders from Mondas.

CYBERMAN

TYPE I


0
10
20
30
40
CENTIMETRES

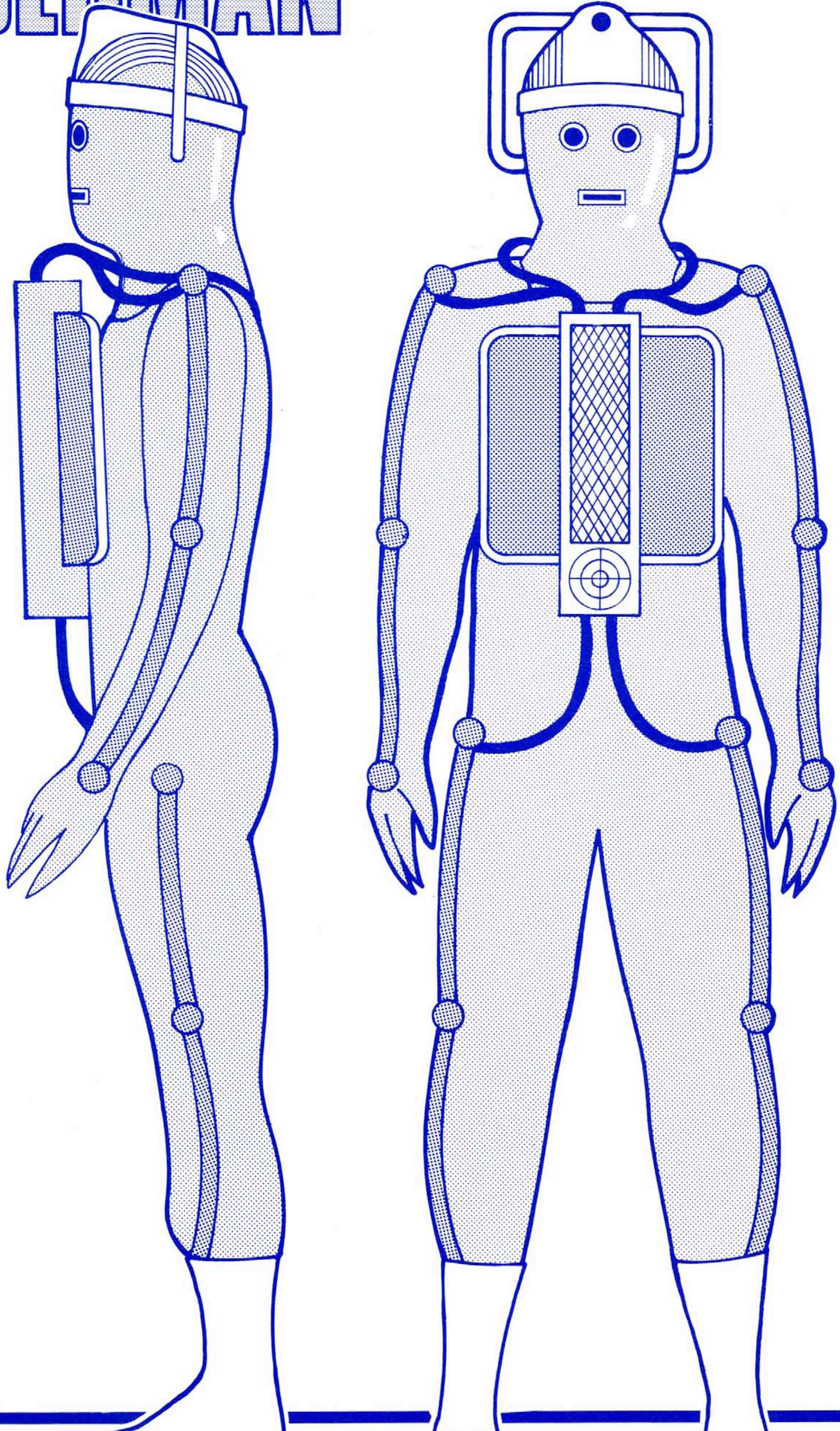
■ **DARK GREY**

▨ **LIGHT GREY**

□ **SILVER**

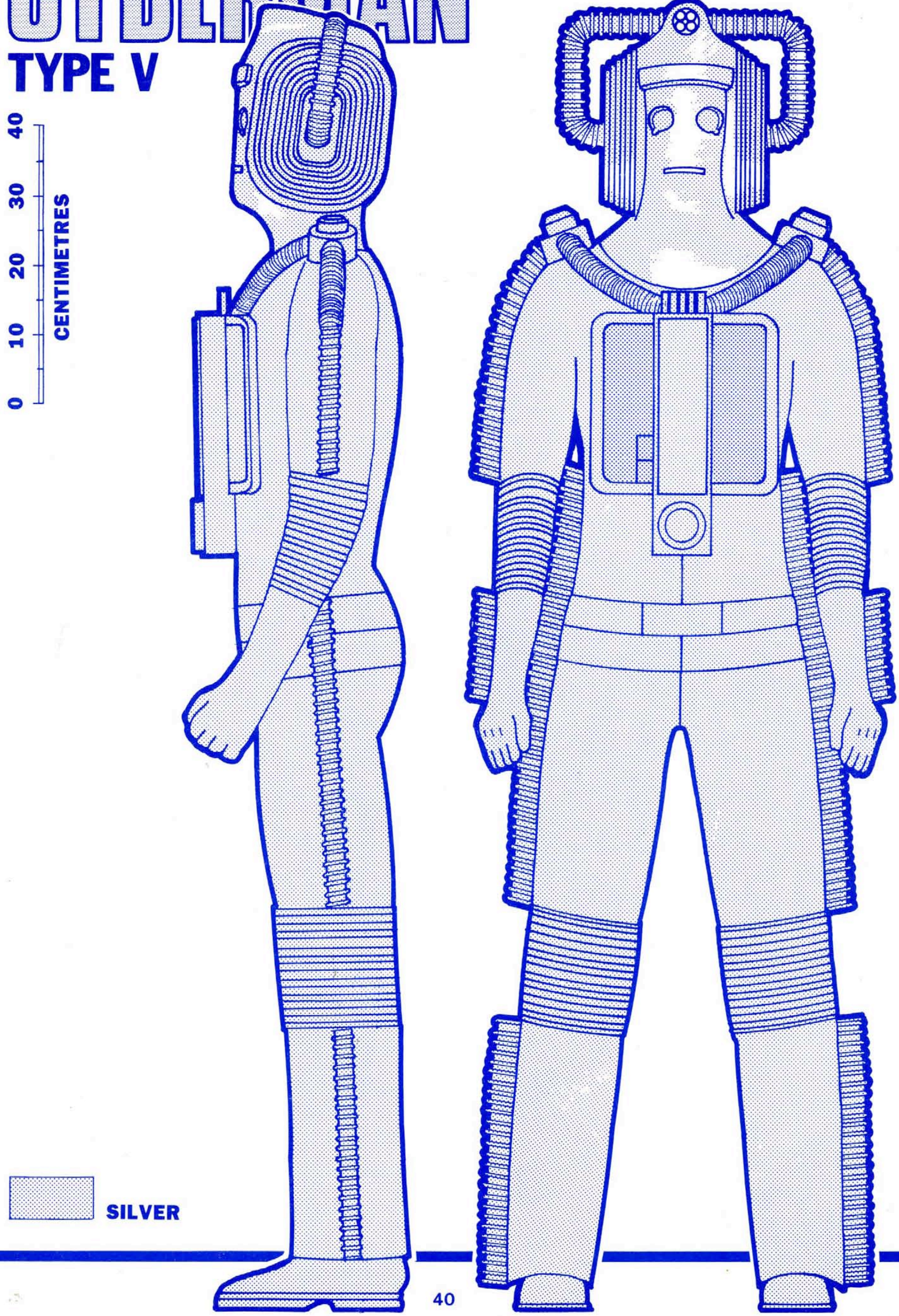
CYBERMAN

TYPE II

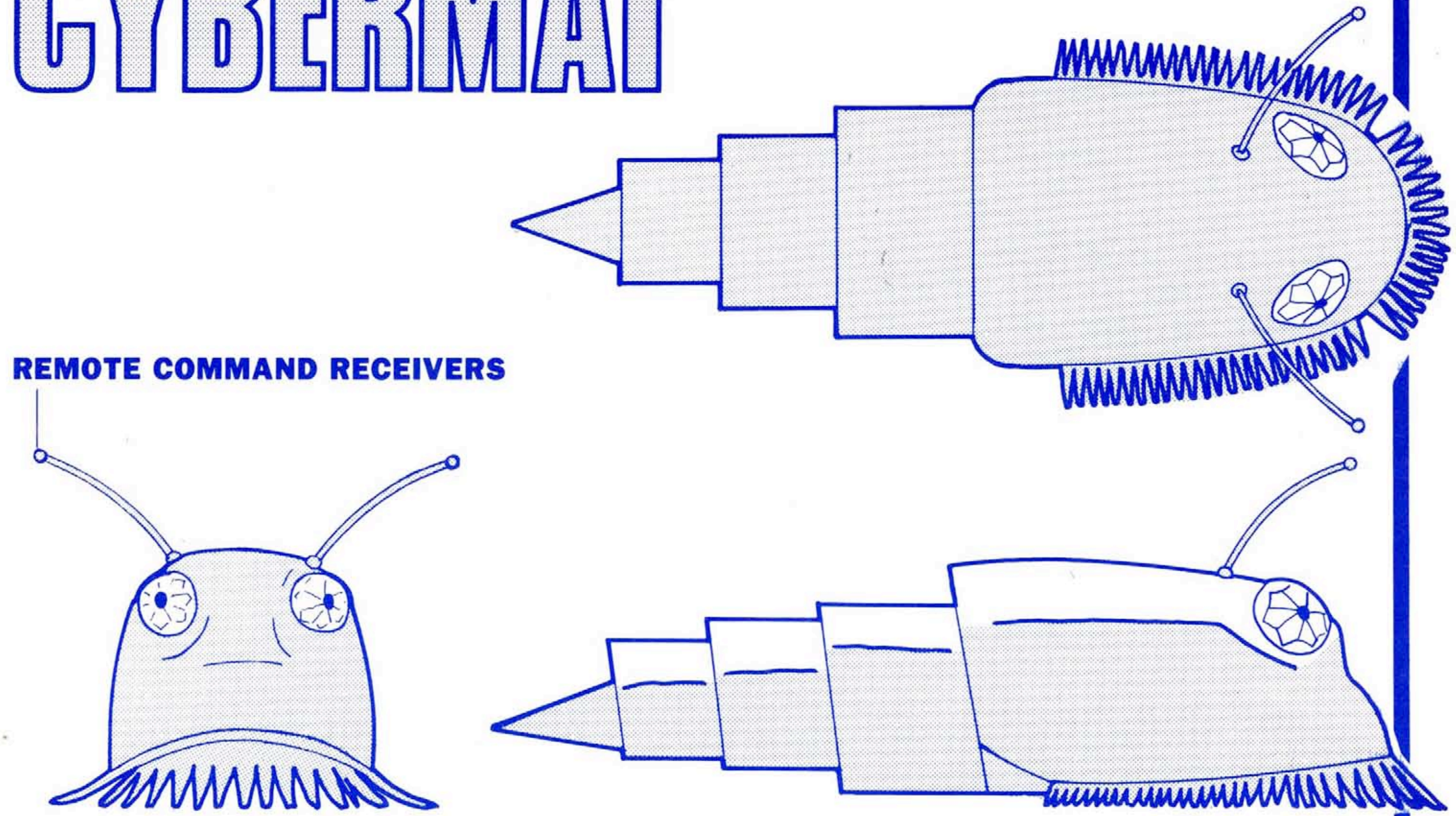


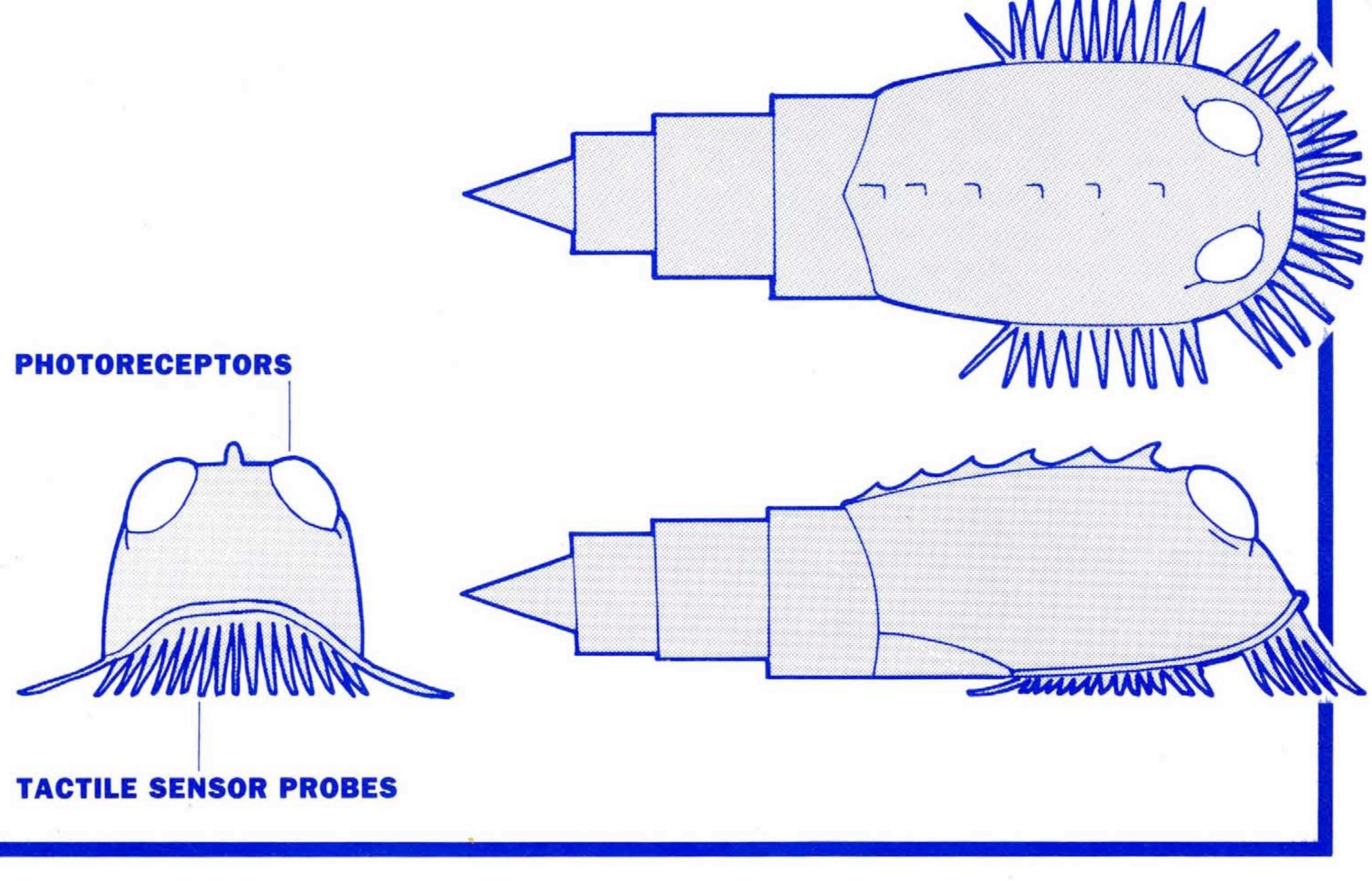
CYBERMAN

TYPE V


40
30
20
10
0
CENTIMETRES
▨ SILVER

THE CYBERMAT


REMOTE COMMAND RECEIVERS


PHOTORECEPTORS
TACTILE SENSOR PROBES

THE ROBOT

The Robot was designed and built on Earth by Professor Kettlewell for use in space research.

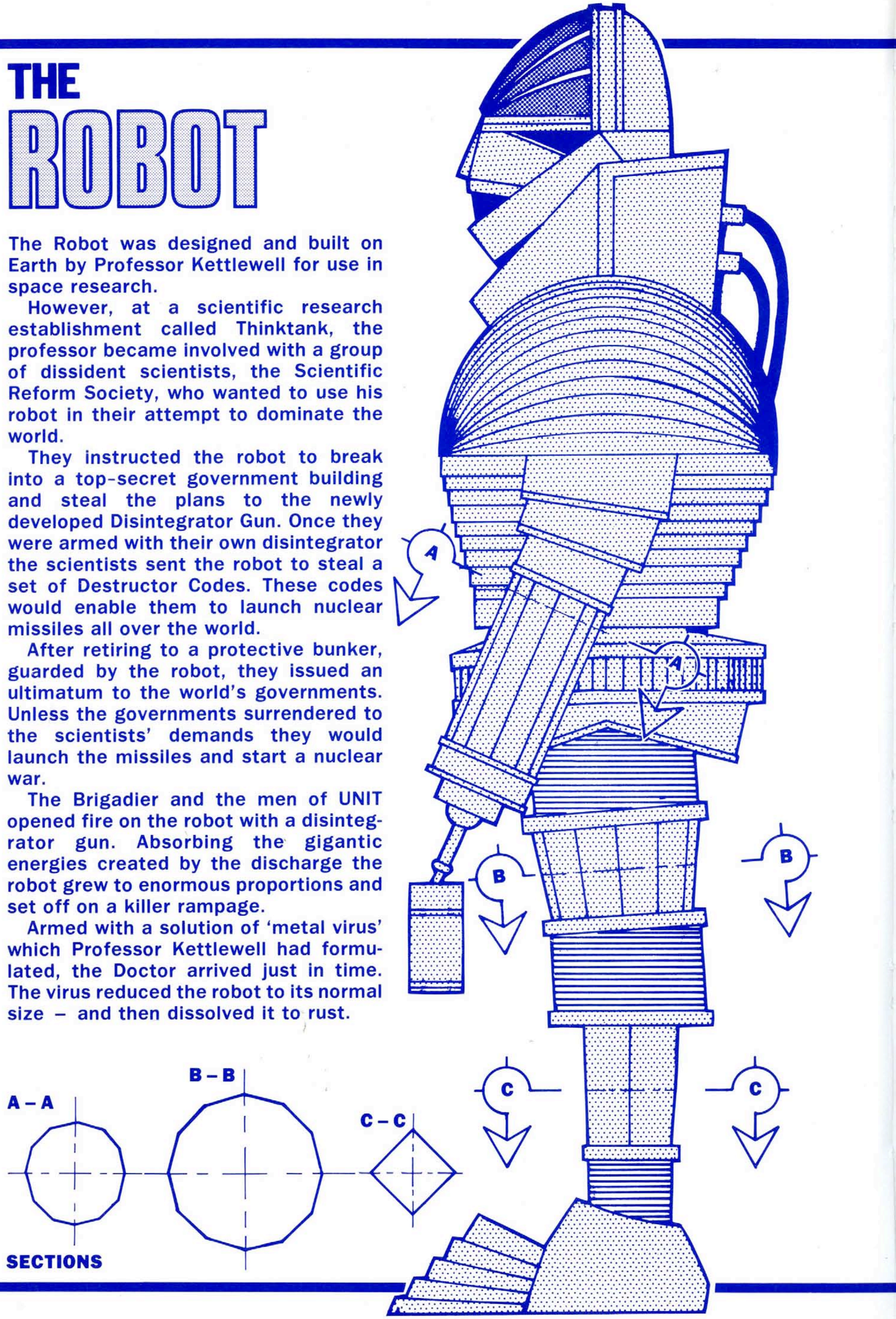
However, at a scientific research establishment called Thinktank, the professor became involved with a group of dissident scientists, the Scientific Reform Society, who wanted to use his robot in their attempt to dominate the world.

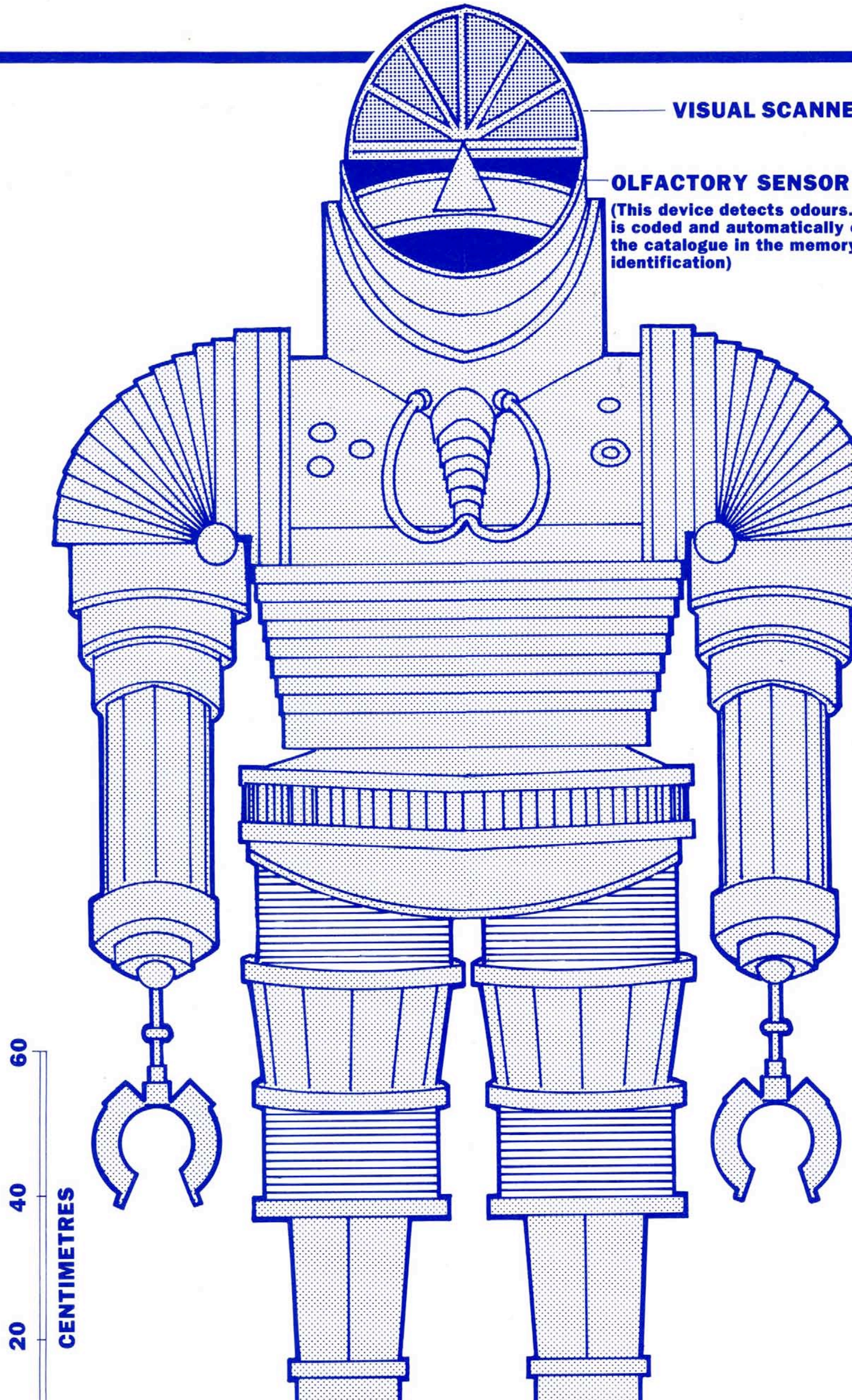
They instructed the robot to break into a top-secret government building and steal the plans to the newly developed Disintegrator Gun. Once they were armed with their own disintegrator the scientists sent the robot to steal a set of Destructor Codes. These codes would enable them to launch nuclear missiles all over the world.

After retiring to a protective bunker, guarded by the robot, they issued an ultimatum to the world's governments. Unless the governments surrendered to the scientists' demands they would launch the missiles and start a nuclear war.

The Brigadier and the men of UNIT opened fire on the robot with a disintegrator gun. Absorbing the gigantic energies created by the discharge the robot grew to enormous proportions and set off on a killer rampage.

Armed with a solution of 'metal virus' which Professor Kettlewell had formulated, the Doctor arrived just in time. The virus reduced the robot to its normal size – and then dissolved it to rust.





VISUAL SCANNER
OLFACTORY SENSOR UNIT
60
40
20
0
CENTIMETRES

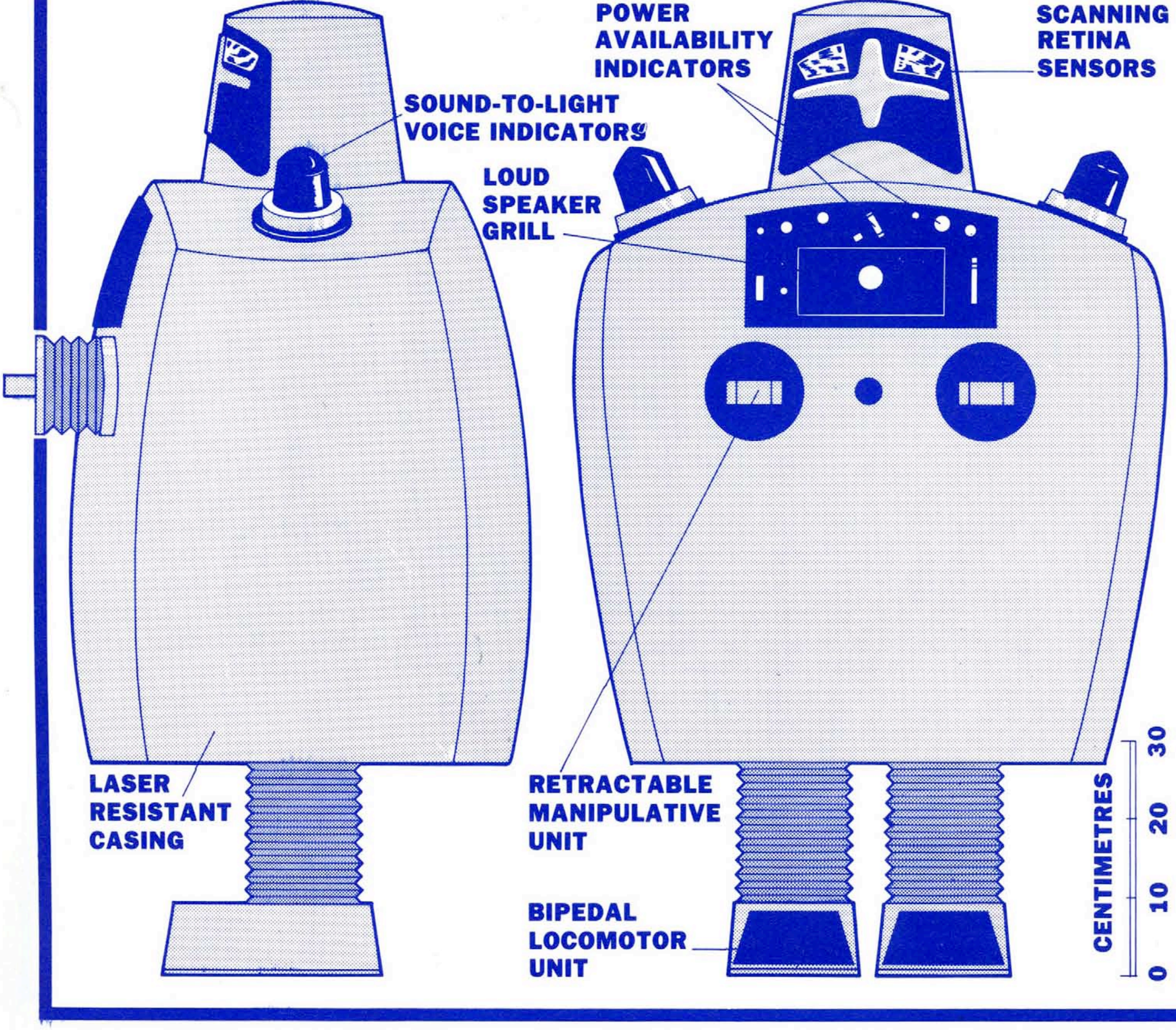
(This device detects odours. The information is coded and automatically checked against the catalogue in the memory bank for identification)

THE SERVO ROBOT

As part of the Cybermen's third attempted invasion of the Earth, they hid two of their number on board a space-freighter, the Silver Carrier. After its human crew was disposed of, the freighter was piloted by the Servo Robot and diverted to head for a giant space station called the Wheel.

As well as manning the freighter, the Servo Robot also acted as its guardian, as the Doctor and Jamie discovered when they made a landing on the ship. With the Doctor knocked unconscious by a sudden course correction, Jamie managed to destroy the Robot but not before it had completed its final task, that of releasing several egg-like objects from a pod in the control room to float across Space and eventually adhere to the outer hull of the Wheel.

The Doctor recovered from his fall soon enough to recognise the contents of the eggs as Cybermats and, using the Time-Vector generator from the TARDIS, boosted the power of the Wheel's lasers to destroy the Cyber-fleet in space.


POWER AVAILABILITY INDICATORS
SCANNING RETINA SENSORS
SOUND-TO-LIGHT VOICE INDICATORS
LOUD SPEAKER GRILL
LASER RESISTANT CASING
RETRACTABLE MANIPULATIVE UNIT
BIPEDAL LOCOMOTOR UNIT
CENTIMETRES
0
10
20
30

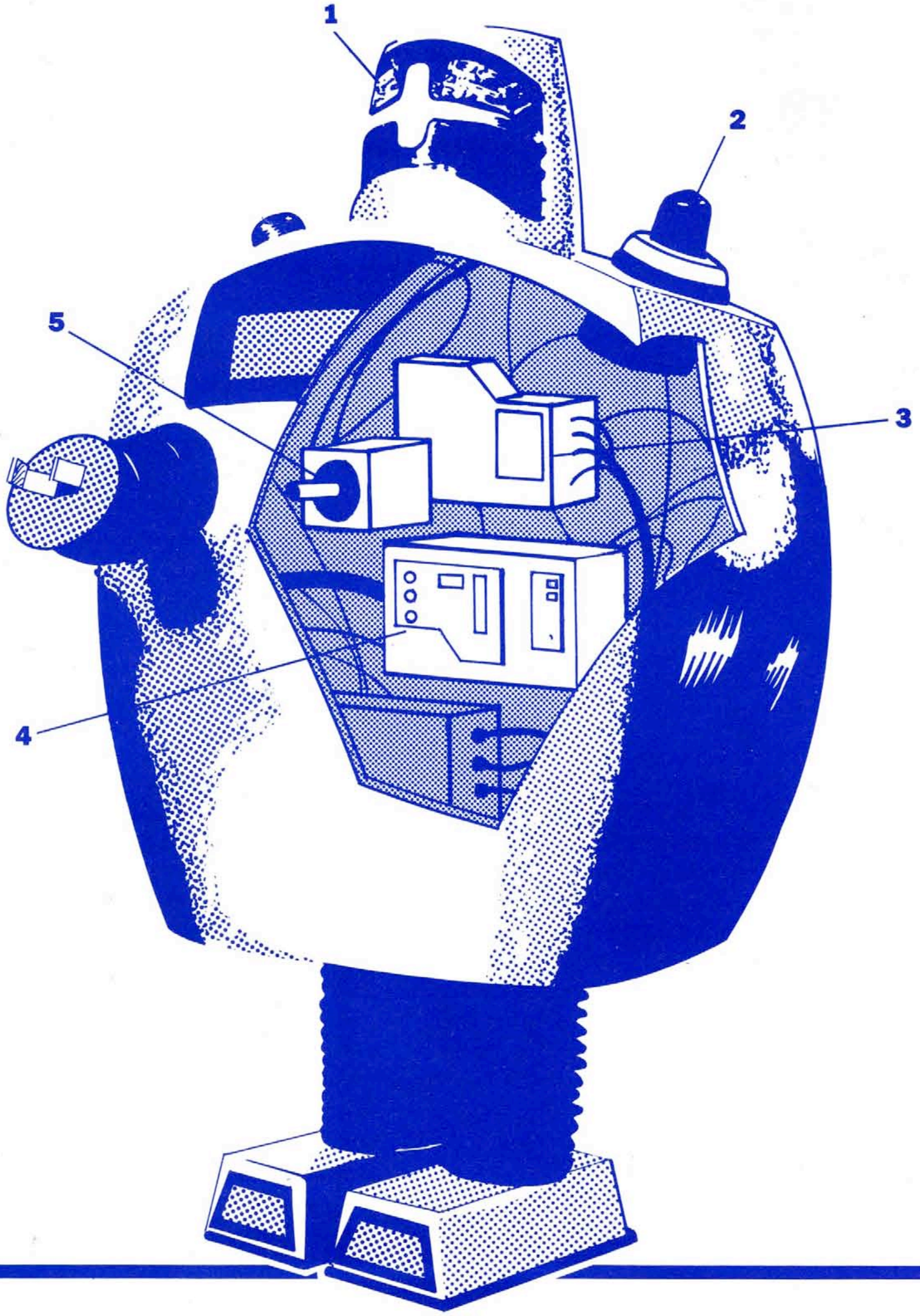
1. **SCANNING RETINA DEVICE** – Through the prismatic eye lens a laser scans the area in front of the robot 500 times per second. The data are relayed to the central control where the information is decoded. The device allows the robot to detect movement and to distinguish colours and shapes in three dimensions.

2. **VOCAL INDICATORS** – The lights on the shoulders show humans which robot is speaking, when more than one is present. The lights are sound-to-light activated and flash in synchronisation with the robot's vocal syllables.

3. **INFO-COM** – The robot's internal computer which processes and stores all data and relays them to the central control.

4. **CENTRAL CONTROL UNIT (CCU)** – This is the robot's decision-making mechanism. It gathers information from the INFO-COM and determines what action is to be taken.

5. **GUN** – The ServoRobot is fitted with an offensive/defensive beam weapon. Its power and intensity are controlled by the CCU.



QUARKS

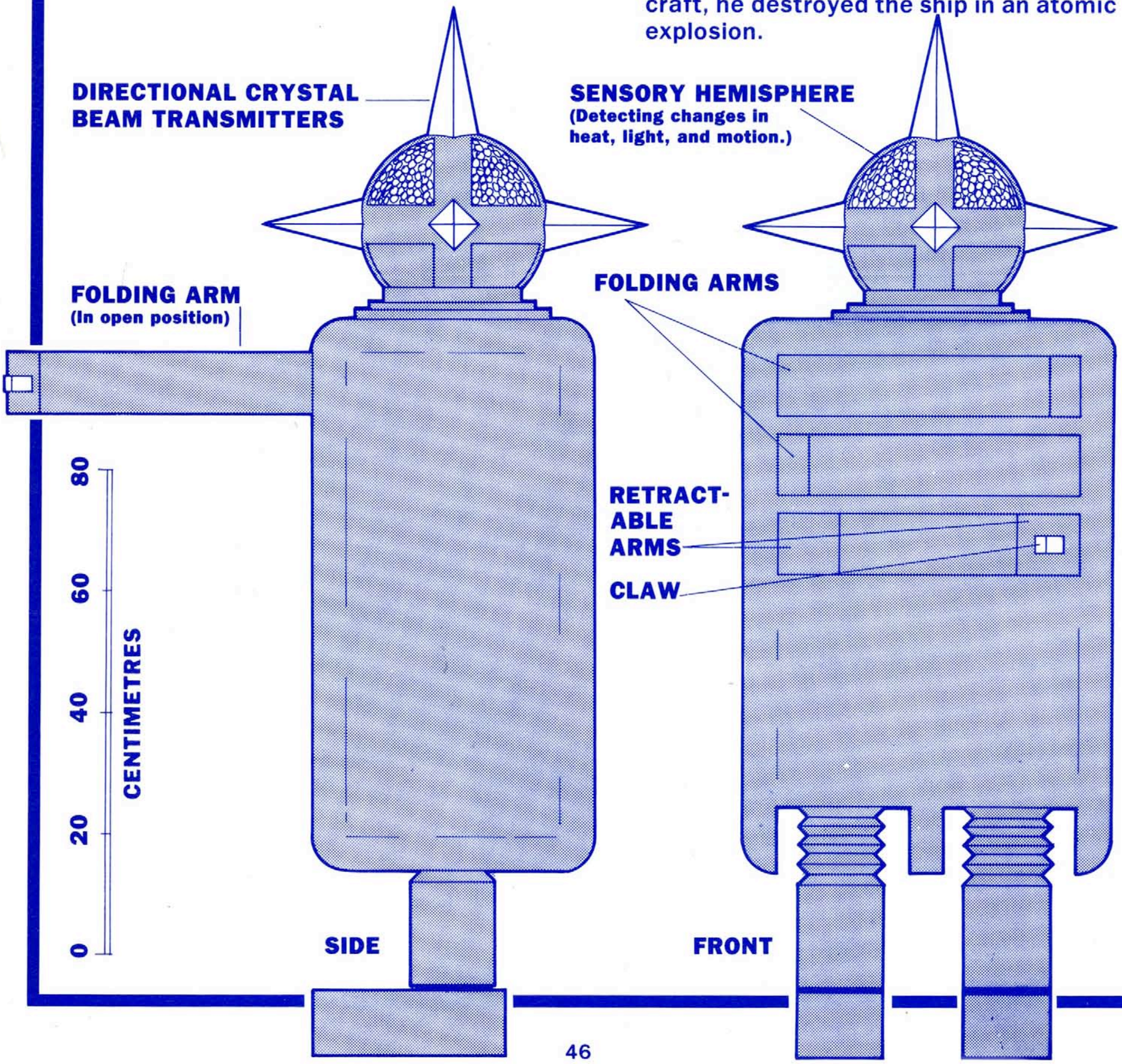
The Doctor encountered the Quarks when the TARDIS materialised on the planet Dulkis.

A space-craft manned by two of the cruel race known as the Dominators made an unscheduled landing on Dulkis. In order to obtain fuel for their space-craft they planned to drill through the planet's crust and fire rockets down the bore-holes. This would cause the molten core to erupt. By dropping seed capsules down the holes, they intended to turn Dulkis into a radio-active mass.

The Dominators attempted to subjugate the planet's inhabitants as enslaved workers to hasten their plan. The Dulcians offered no resistance as they were by nature peace-loving.

The Quarks were the Dominators' terrifying servant robots and were the force by which they enslaved some of the Dulcians. The Quarks communicated with each other by means of a series of high-pitched sound waves.

The Doctor was able to intercept a radio-active seed capsule and concealing it on board the Dominators' space-craft, he destroyed the ship in an atomic explosion.


DIRECTIONAL CRYSTAL BEAM TRANSMITTERS
SENSORY HEMISPHERE
(Detecting changes in heat, light, and motion.)
FOLDING ARM
(In open position)
FOLDING ARMS
RETRACTABLE ARMS
CLAW
80
60
40
20
0
CENTIMETRES
SIDE
FRONT

WHITE ROBOT

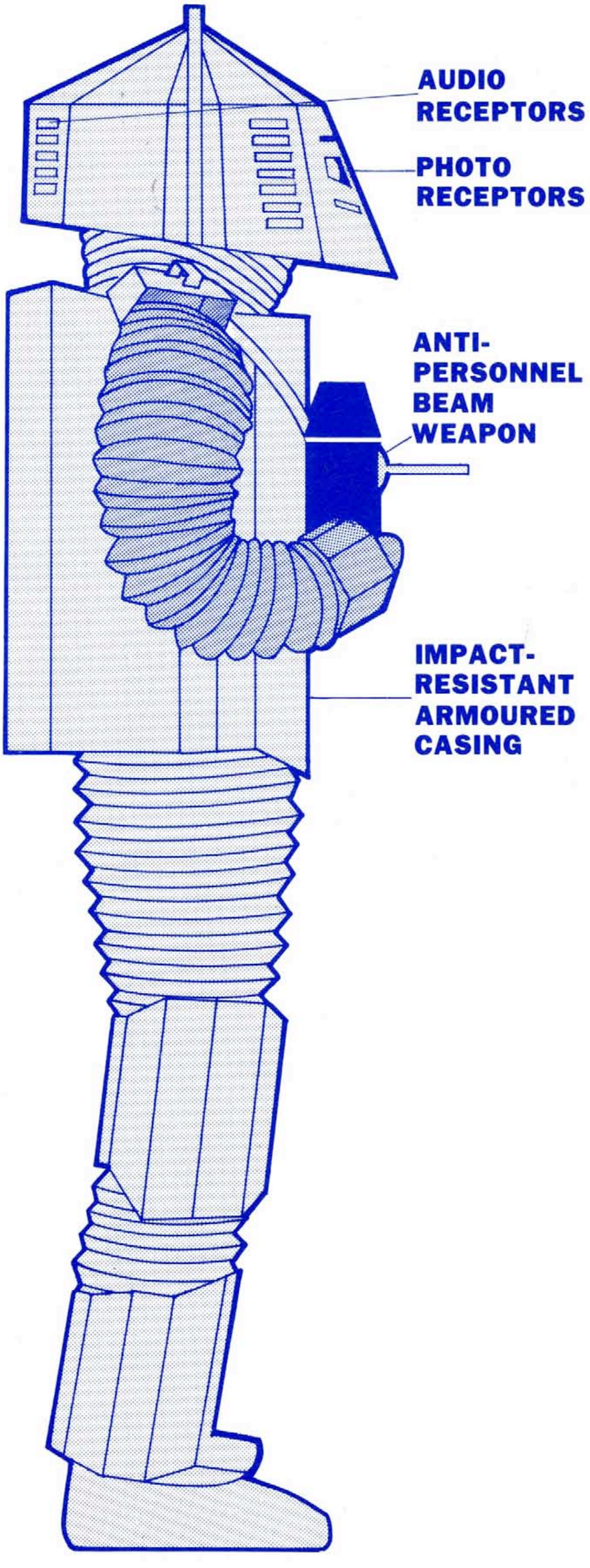
In order to escape a lava flow, the Doctor manoeuvred the TARDIS out of Space and Time. It materialised in a huge white void known as the Land of Fiction, a place where fiction appears to be reality.

The Doctor, Jamie and Zoe were pursued by White Robots and, during their flight, also encountered life-size mechanical soldiers.

They managed to gain entrance to the citadel of the Mind-Master, an aged gentleman, anxious to retire, who tried to insist that the Doctor take his place. The Doctor refused and his companions were taken prisoner by the White Robots.

A battle of wits ensued between the Doctor and the Mind-Master in which the Doctor called up famous champions of fiction in order to defeat those conjured up by his adversary.

During the conflict, the Doctor's companions escaped and discovered that the true master of the Land of Fiction was a colossal computer. They managed to overload the machine and escape in the TARDIS.



MOVELLANS

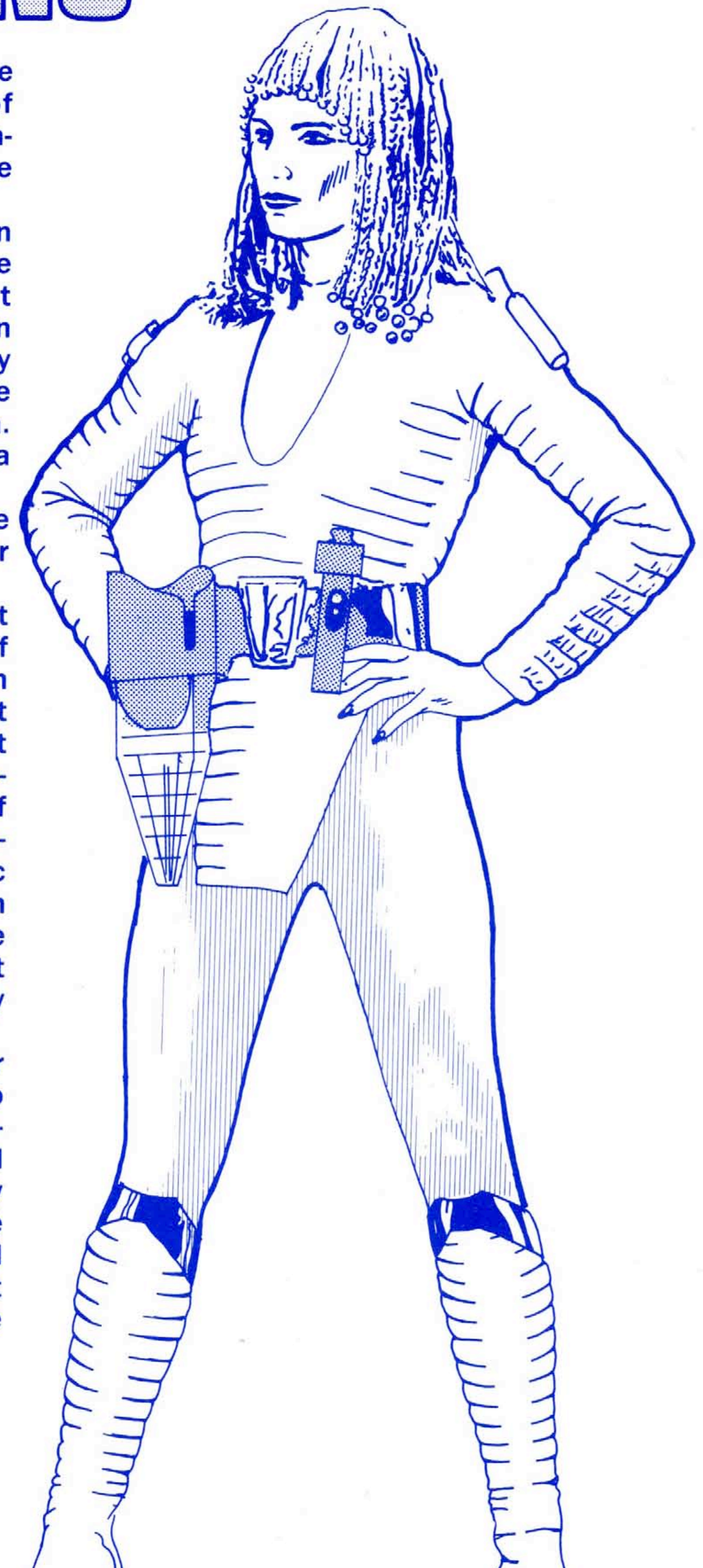
From the farthest flung reaches of the Universe came a people whose reign of terror in the pursuit of Universal domination would be equalled only by the Daleks.

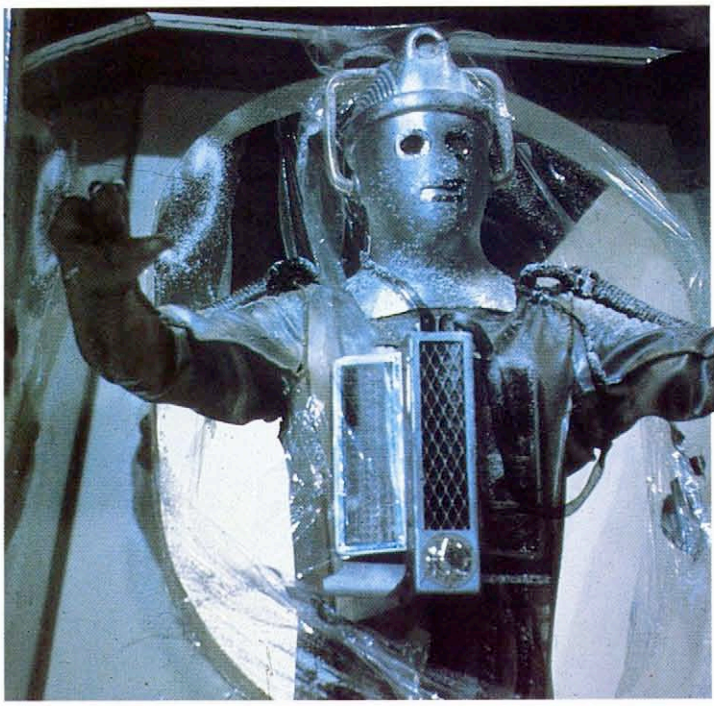
In fact, so closely is Movellan technology matched to that of the Daleks that for centuries conflict between their armies has resulted in neither victory nor defeat. Any strategy employed by the Movellans can be countered by the Daleks and vice versa. Both sides are struggling to devise a strategy which will defeat the other.

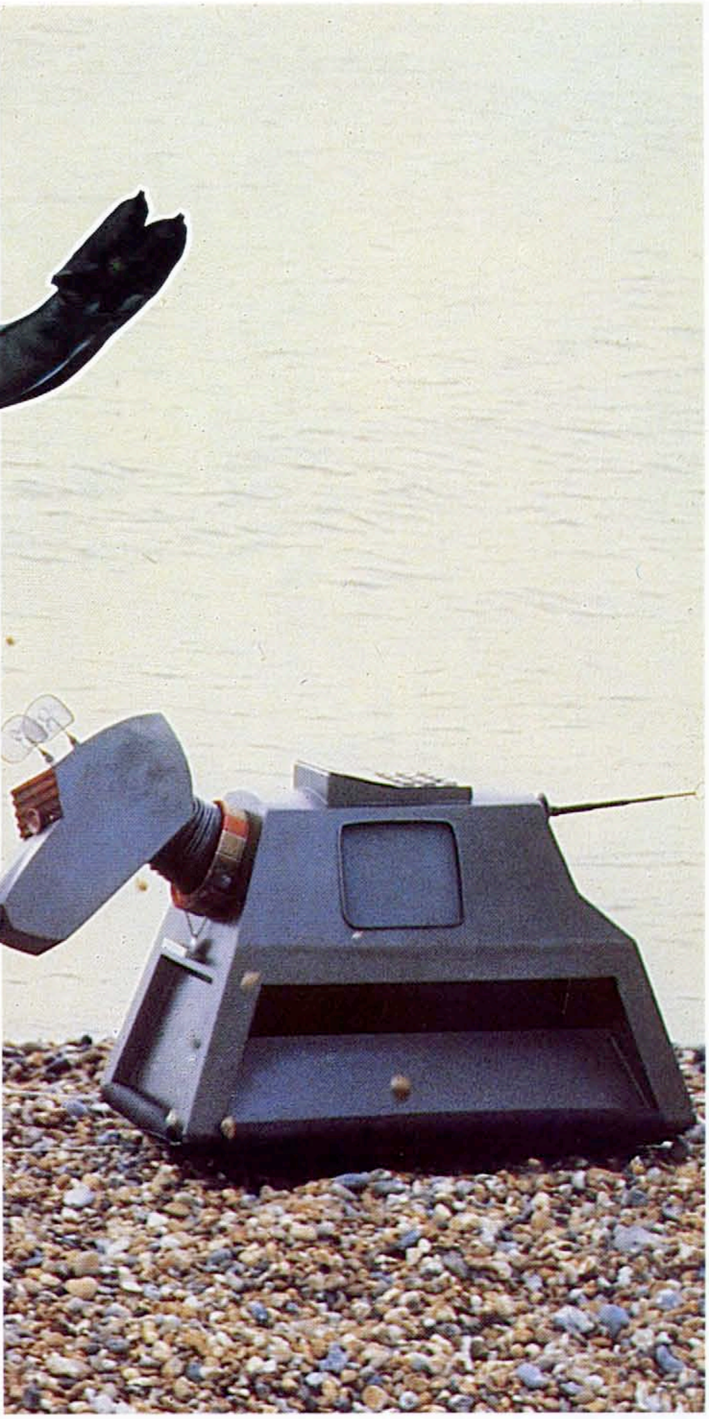
While their respective battle computers search for the answer, their battle fleets remain poised for war.

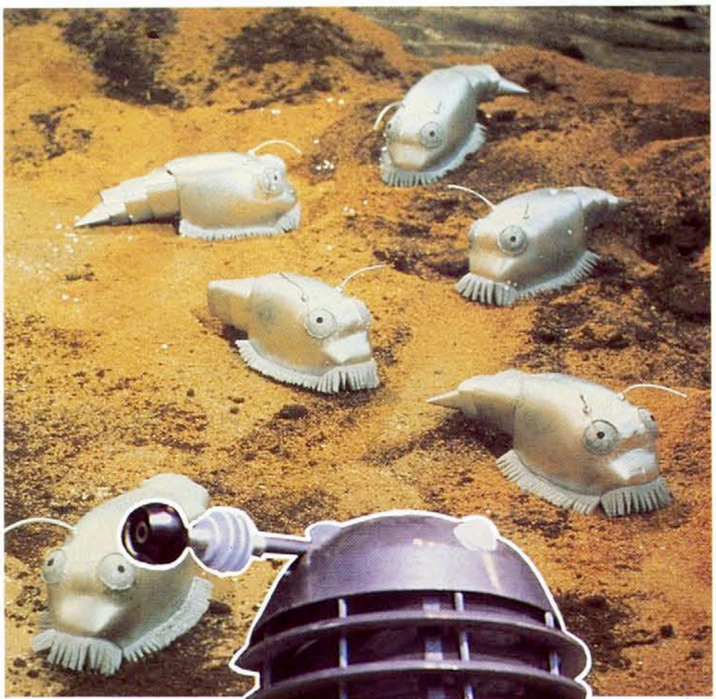
Little is known of Movellan origins, but what is certain is that they are a race of robots, designed to resemble human beauty. Only under close scrutiny does it become apparent that they are not what they appear to be. Their physical make-up represents a truly remarkable feat of biosynthetronic engineering. Micro-miniature hydraulics, biochem osmotic micro-pumps and no less than ten thousand million (10^{10}) artificial nerve cells ensure that even the smallest human bodily function is exactly duplicated.

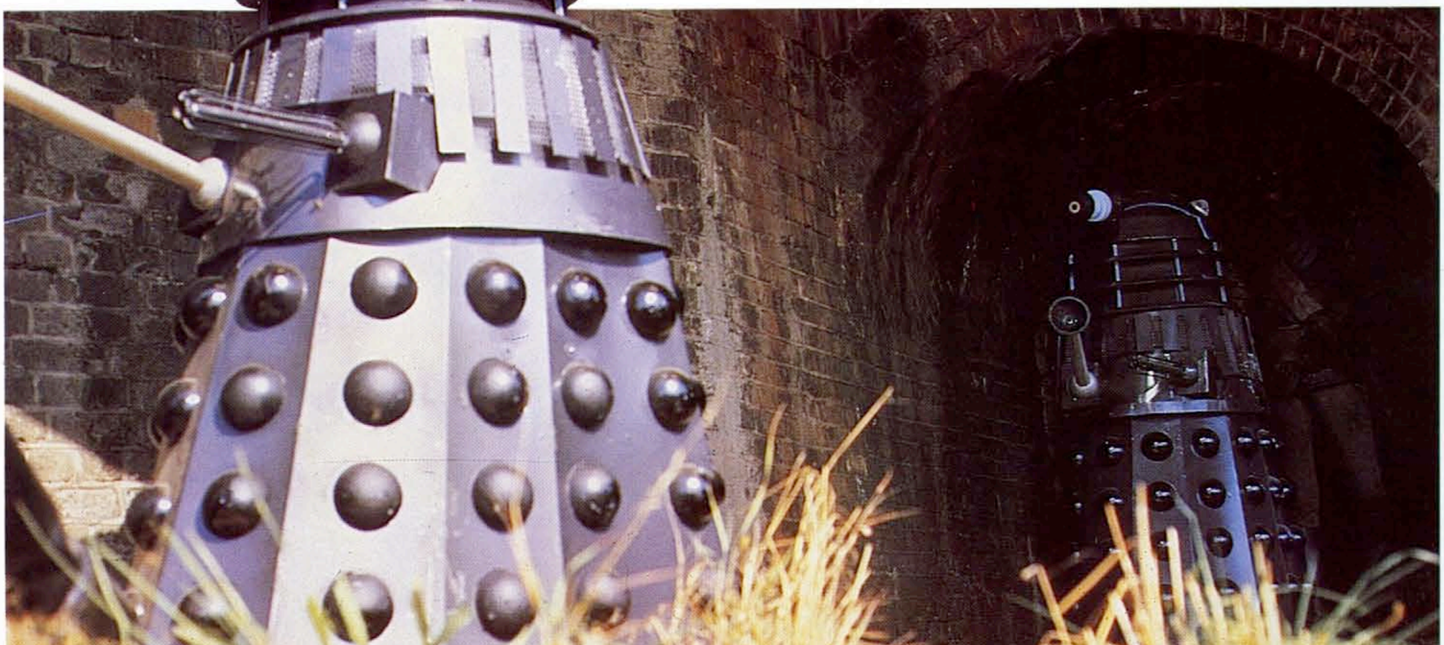
However, for all their superior technological know-how, the beings who created the Movellans were unable to reproduce the emotional and moral qualities which make humans what they are. Although human in appearance, the Movellans are machines, cold and calculating. Ruthless and without feelings, they are no better than the Daleks themselves.

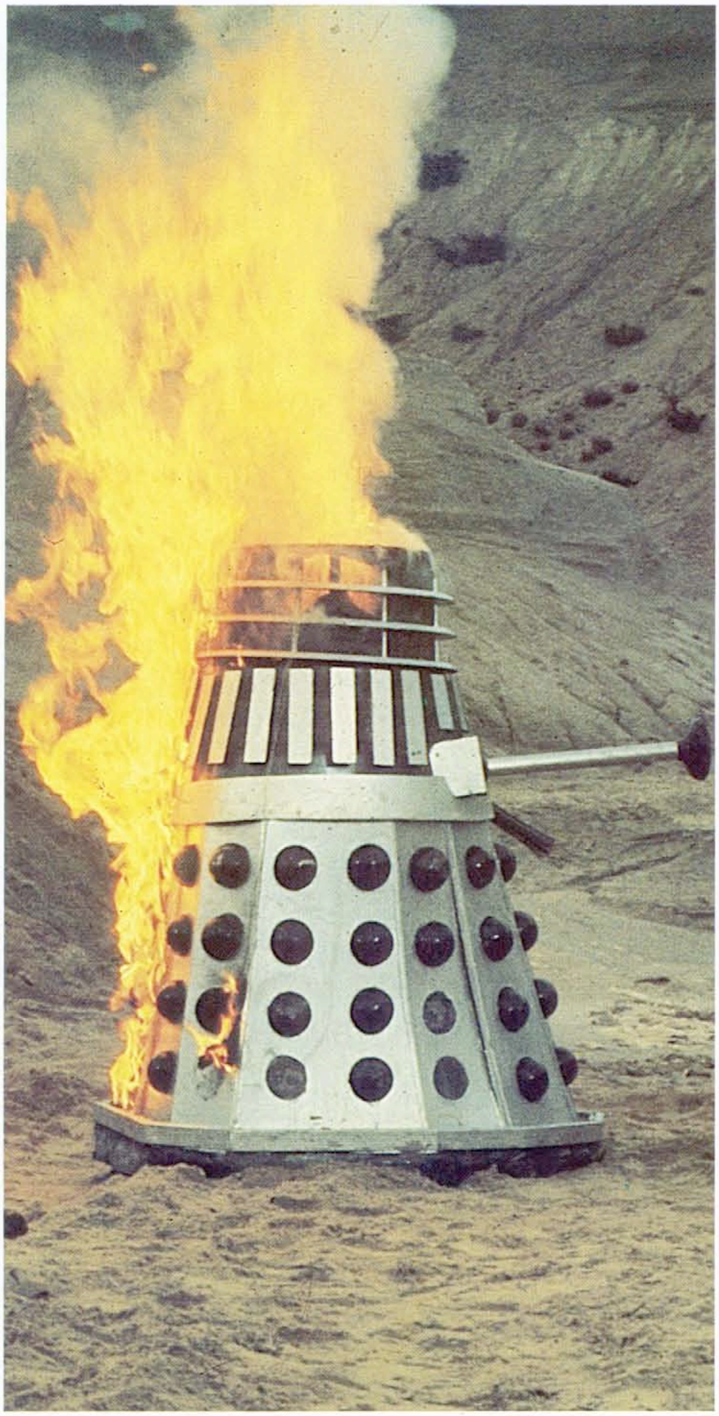


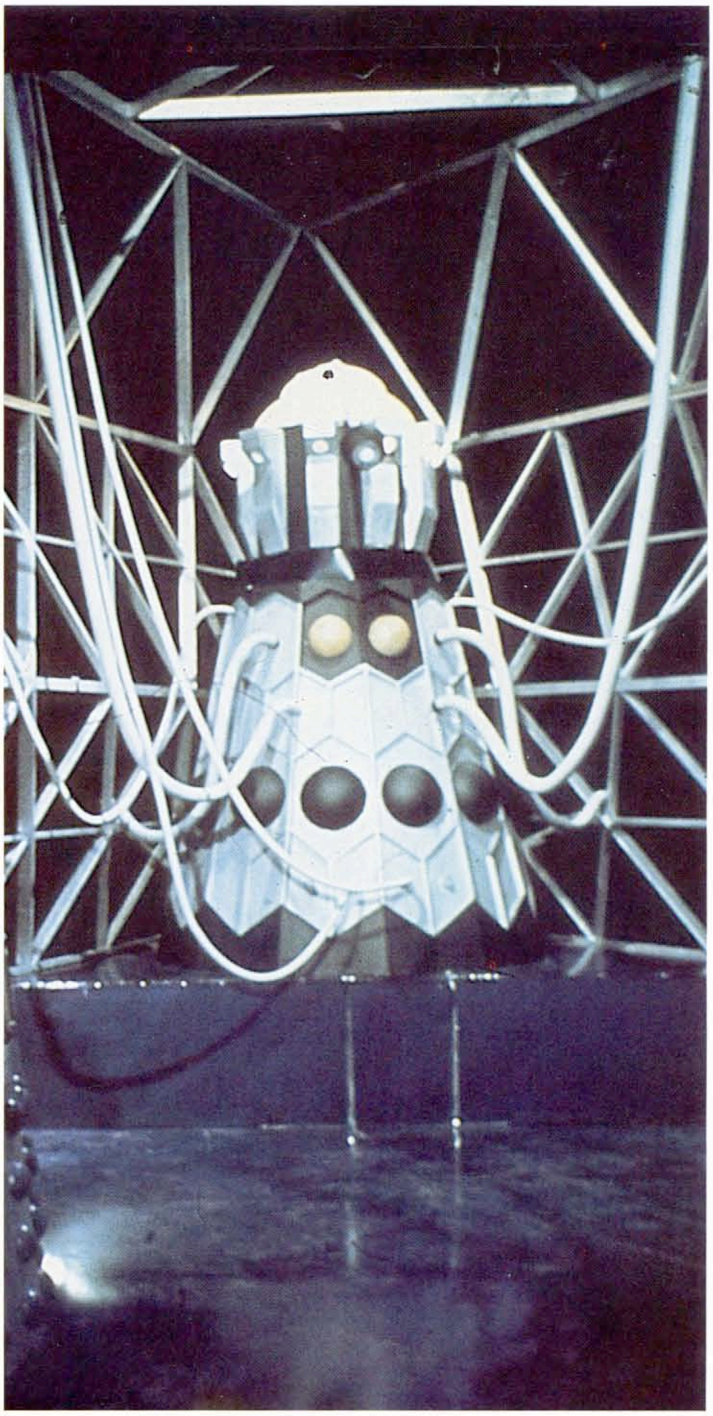










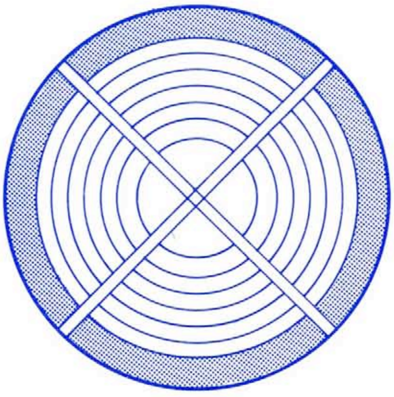


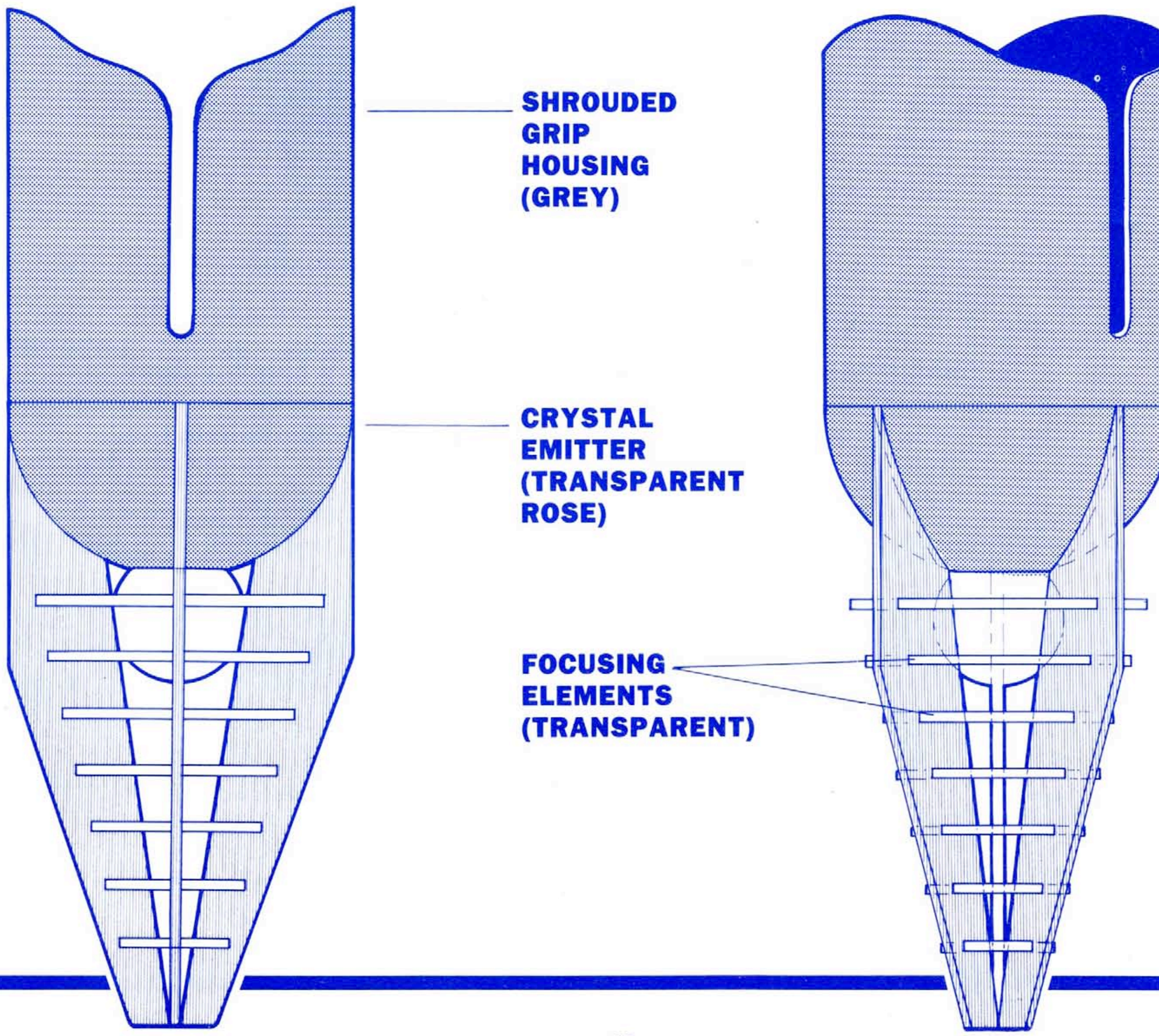
MOVELLAN
SIDE-ARM

The Movellan side-arm is deceptively powerful for its size. This is mainly due to the fact that it contains no power-pack of its own. Instead, it draws its energy directly from the Movellan using it.

The gun accelerates a stream of photons and the crystal emitter concentrates and focuses them into a beam, the intensity of which can be varied.

The handle of the gun is shrouded to protect the Movellan's delicate hand mechanism from any momentary residual radiation which may occur during firing.

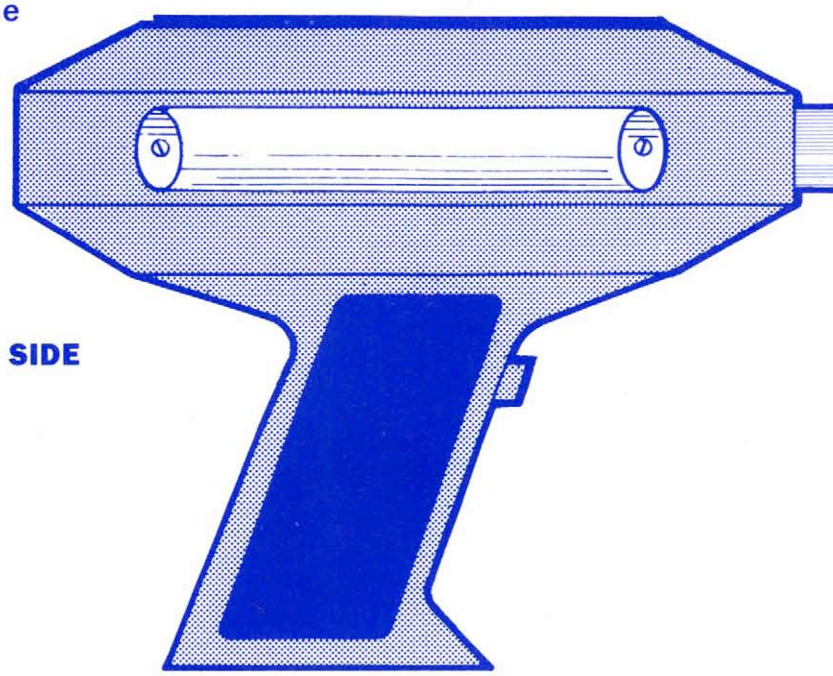



SHROUDED GRIP HOUSING (GREY)
CRYSTAL EMITTER (TRANSPARENT ROSE)
FOCUSING ELEMENTS (TRANSPARENT)

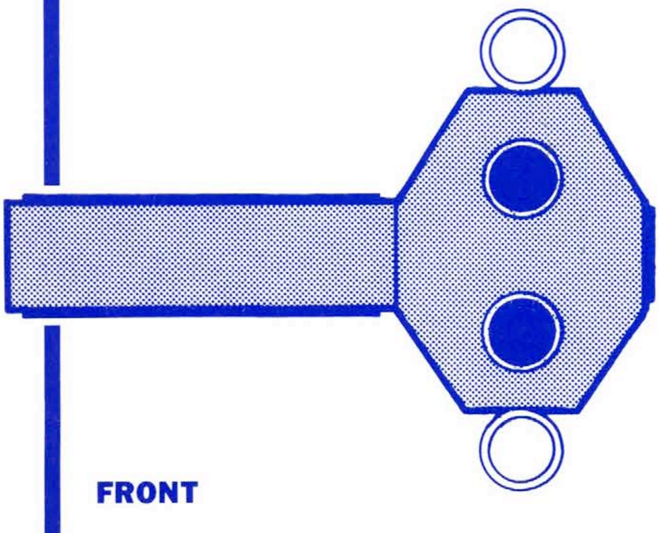
SKONNOS
BLASTER

Standard issue to soldiers of the Skonnos Empire, this compact, lightweight photon blaster has twin emitter tubes to discharge its blasts in rapid succession. As the first emitter fires, the second charges up. Firing both together doubles the blaster's destructive capabilities, though it takes longer for the power to recycle between blasts.

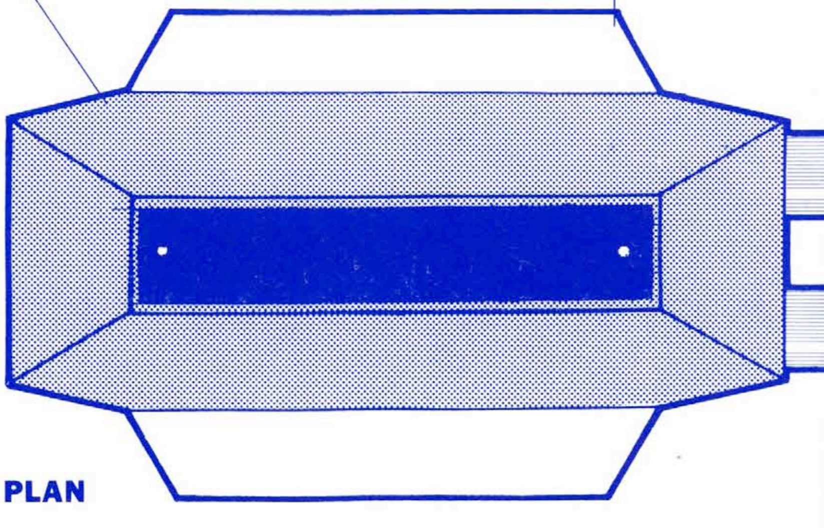
A versatile weapon, it has several force settings. These range from the anti-personnel level allowing the blaster to incapacitate the enemy for varying lengths of time, to the most powerful – enabling it to pierce the armour plate of enemy spacecraft.



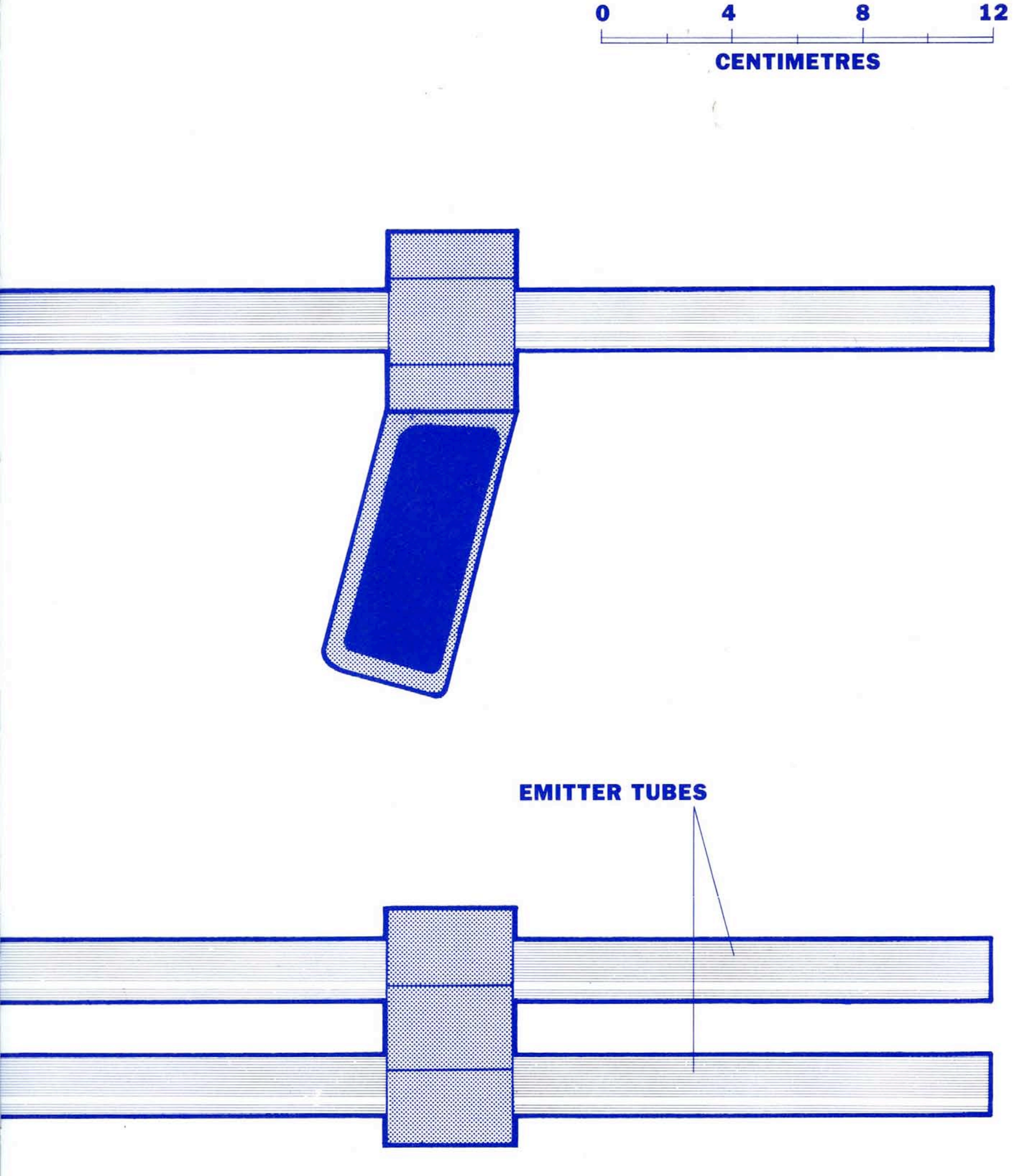
SIDE



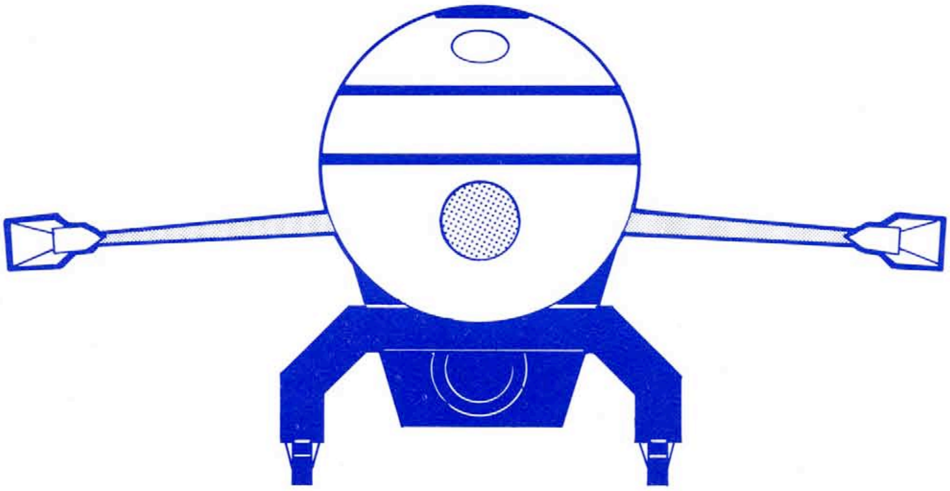
FRONT


REMOVABLE ACCESS PLATE
RANGE-FINDING "SIGHT" SENSORS
(Linked to built-in targetting computer)

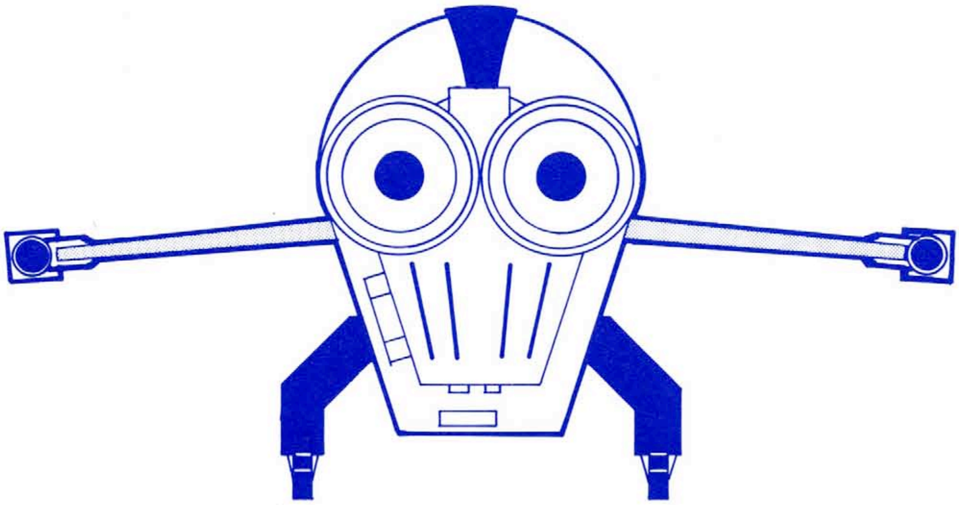
PLAN


CENTIMETRES
EMITTER TUBES

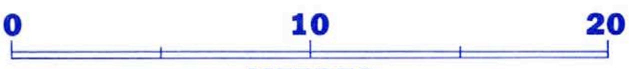
SPACE FREIGHTER

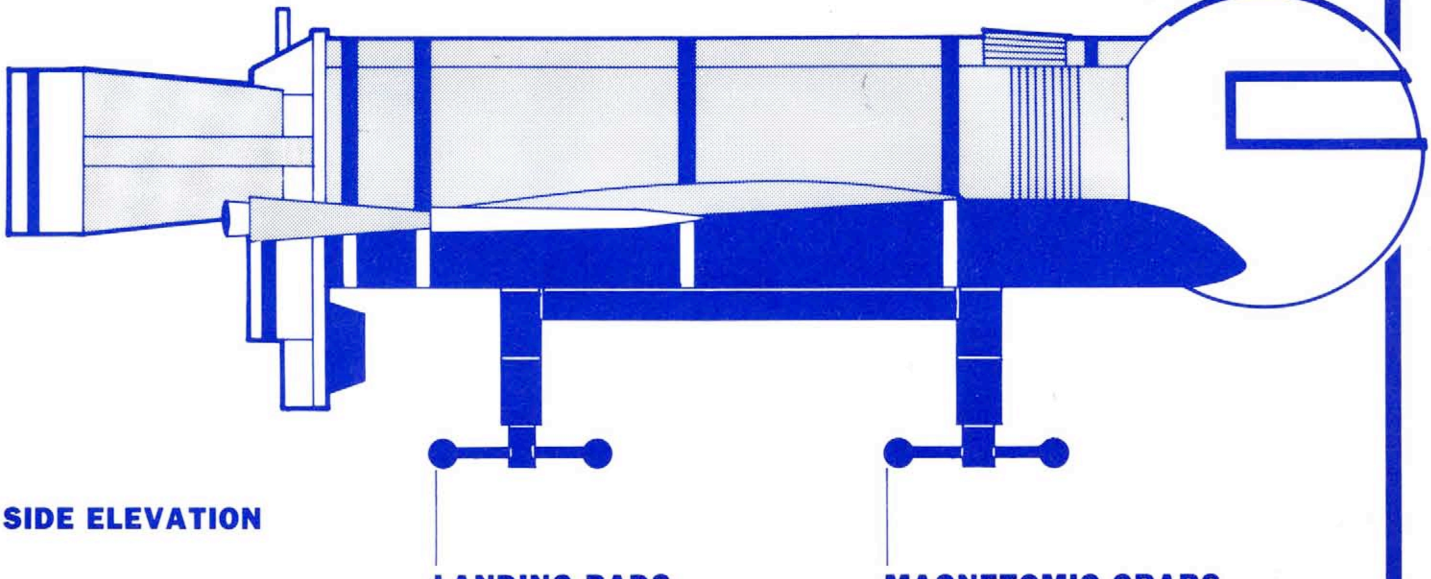


FRONT ELEVATION



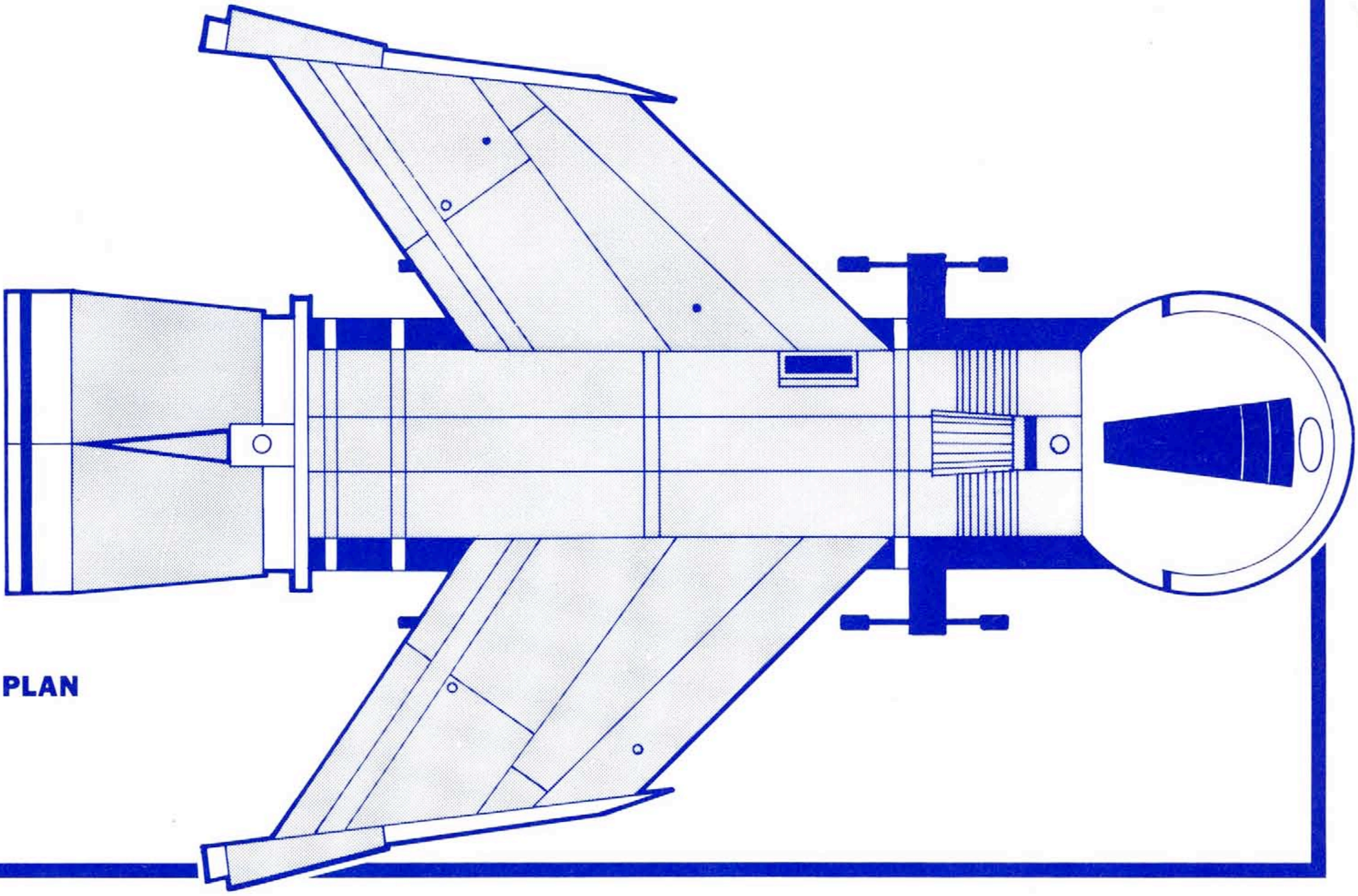
REAR ELEVATION


0
10
20
METRES



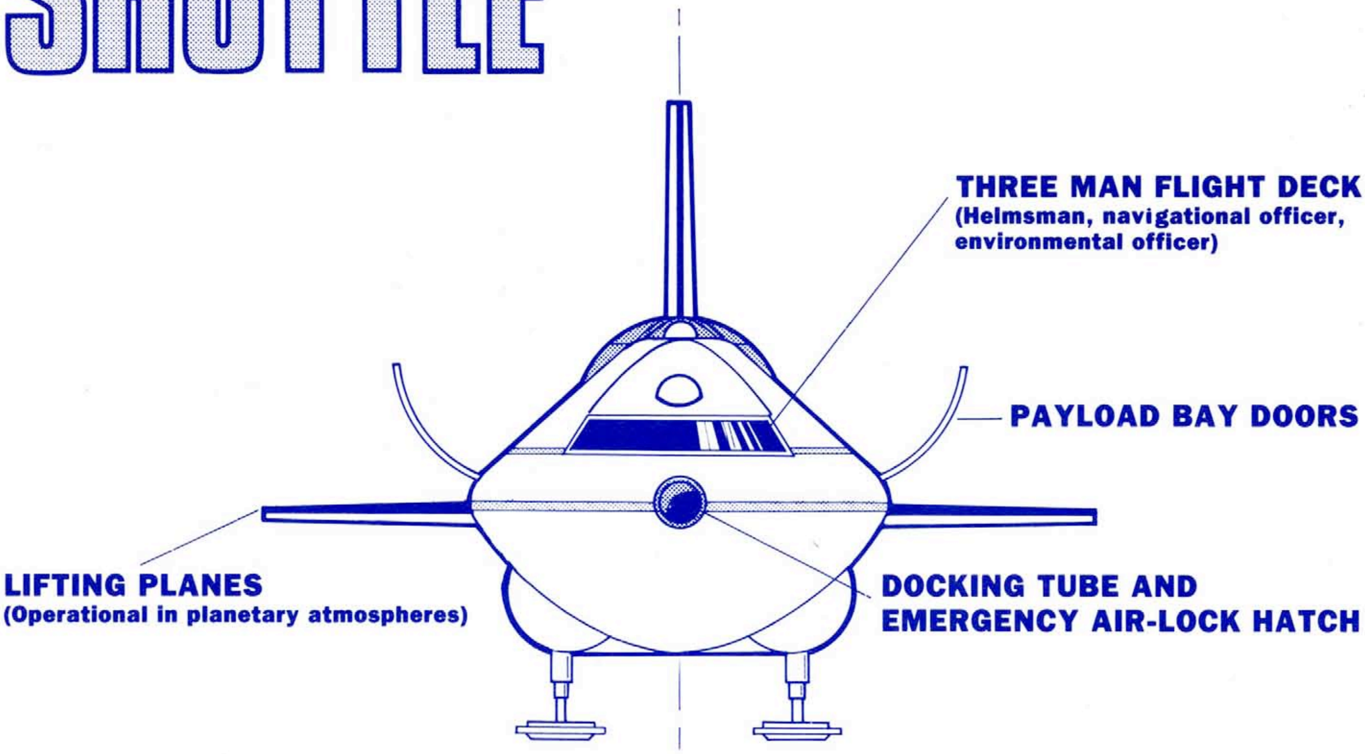
SIDE ELEVATION

LANDING PADS
MAGNETOMIC GRABS

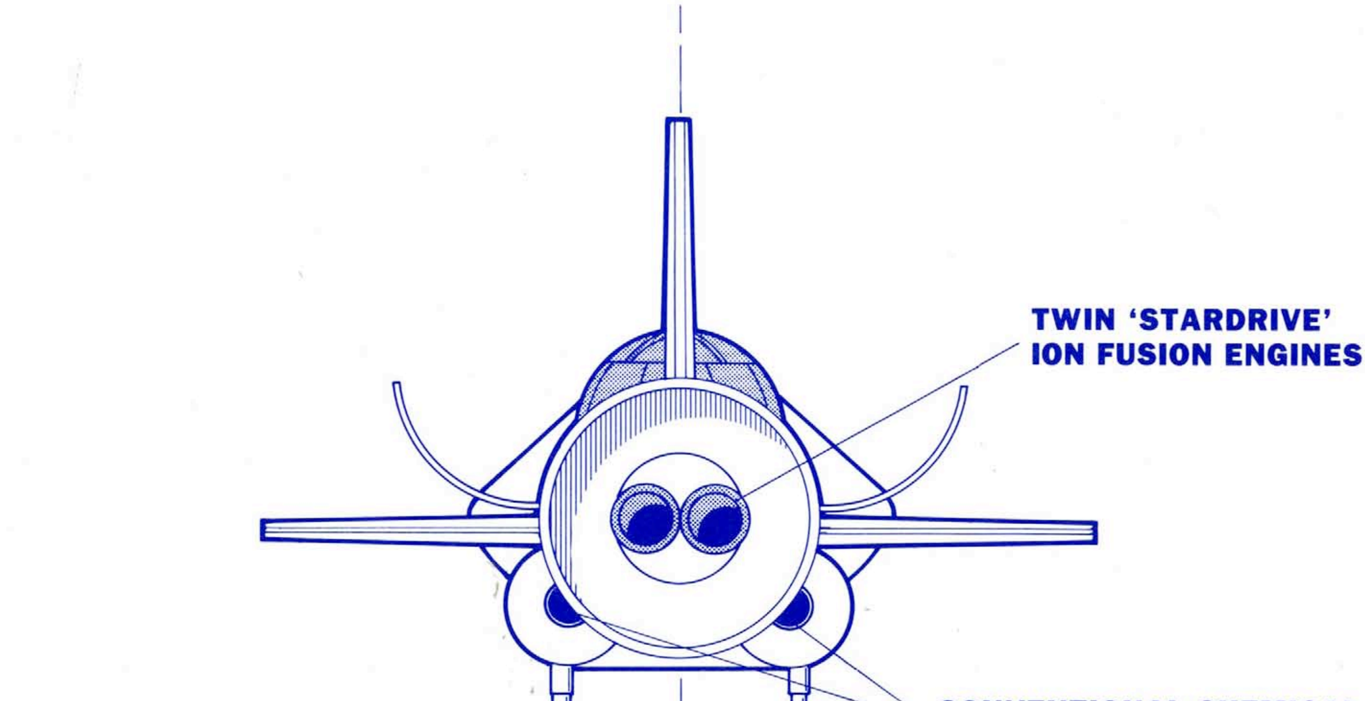


PLAN

EARTH/TITAN SHUTTLE

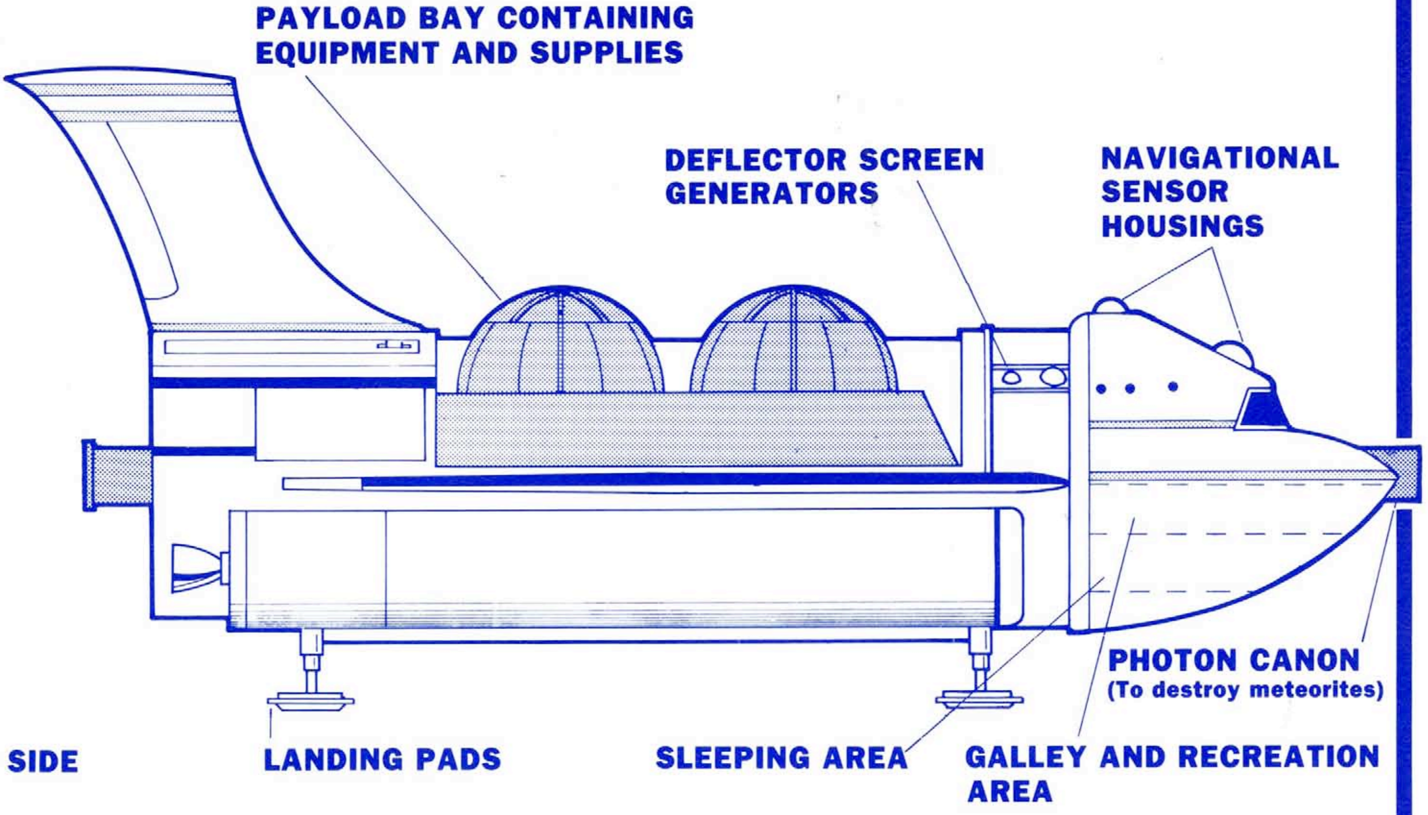

THREE MAN FLIGHT DECK
(Helmsman, navigational officer, environmental officer)
PAYLOAD BAY DOORS
LIFTING PLANES
(Operational in planetary atmospheres)
DOCKING TUBE AND
EMERGENCY AIR-LOCK HATCH

FRONT ELEVATION

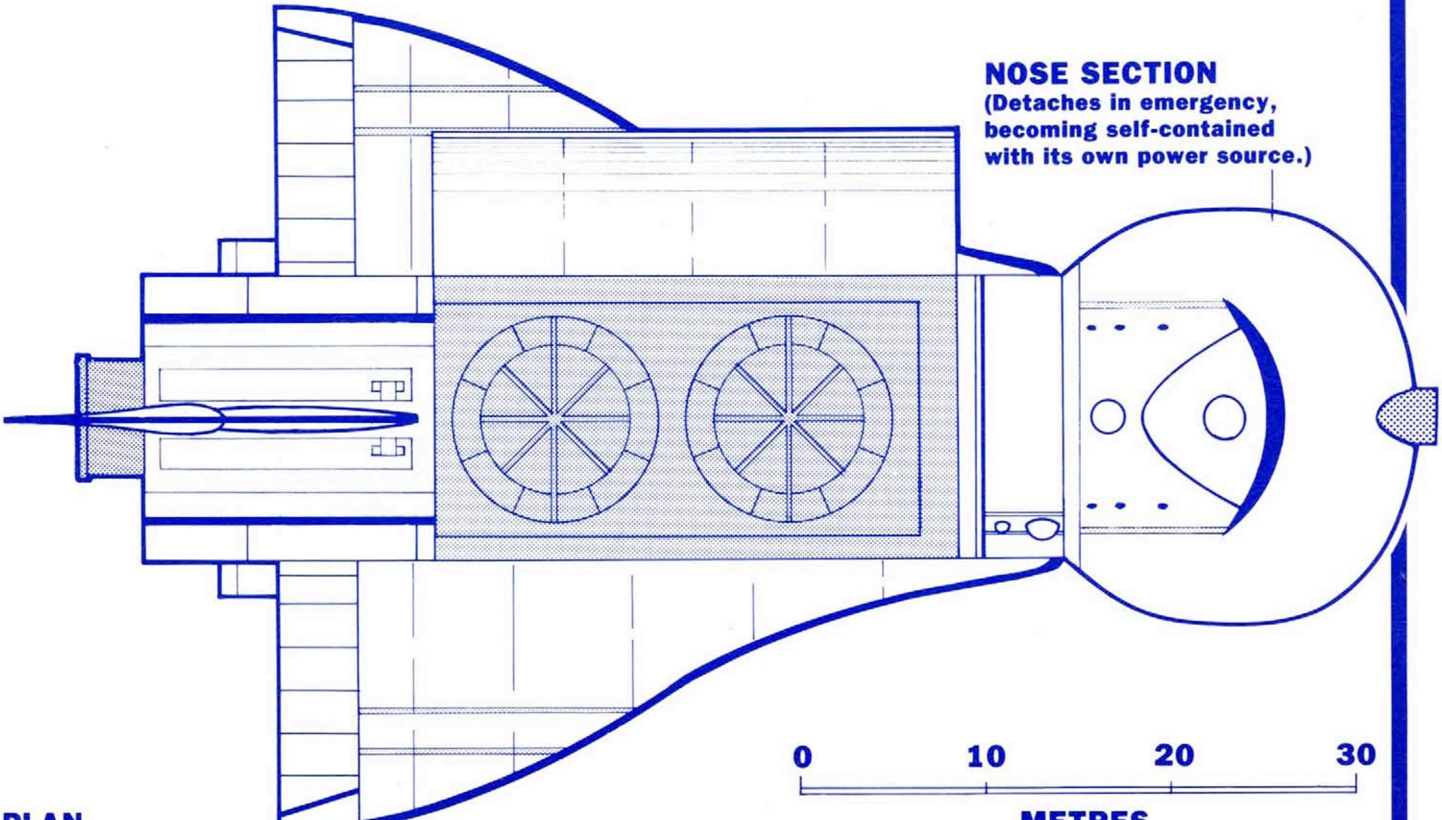

TWIN 'STARDRIVE'
ION FUSION ENGINES
CONVENTIONAL CHEMICAL
ROCKET MOTORS

REAR ELEVATION

NB: STARBOARD SIDE PAYLOAD DOOR OMITTED FOR CLARITY


PAYLOAD BAY CONTAINING EQUIPMENT AND SUPPLIES
DEFLECTOR SCREEN GENERATORS
NAVIGATIONAL SENSOR HOUSINGS
PHOTON CANON
(To destroy meteorites)
LANDING PADS
SLEEPING AREA
GALLEY AND RECREATION AREA

SIDE


NOSE SECTION
(Detaches in emergency, becoming self-contained with its own power source.)
0
10
20
30
METRES

PLAN

JAGAROTH

SPACESHIP

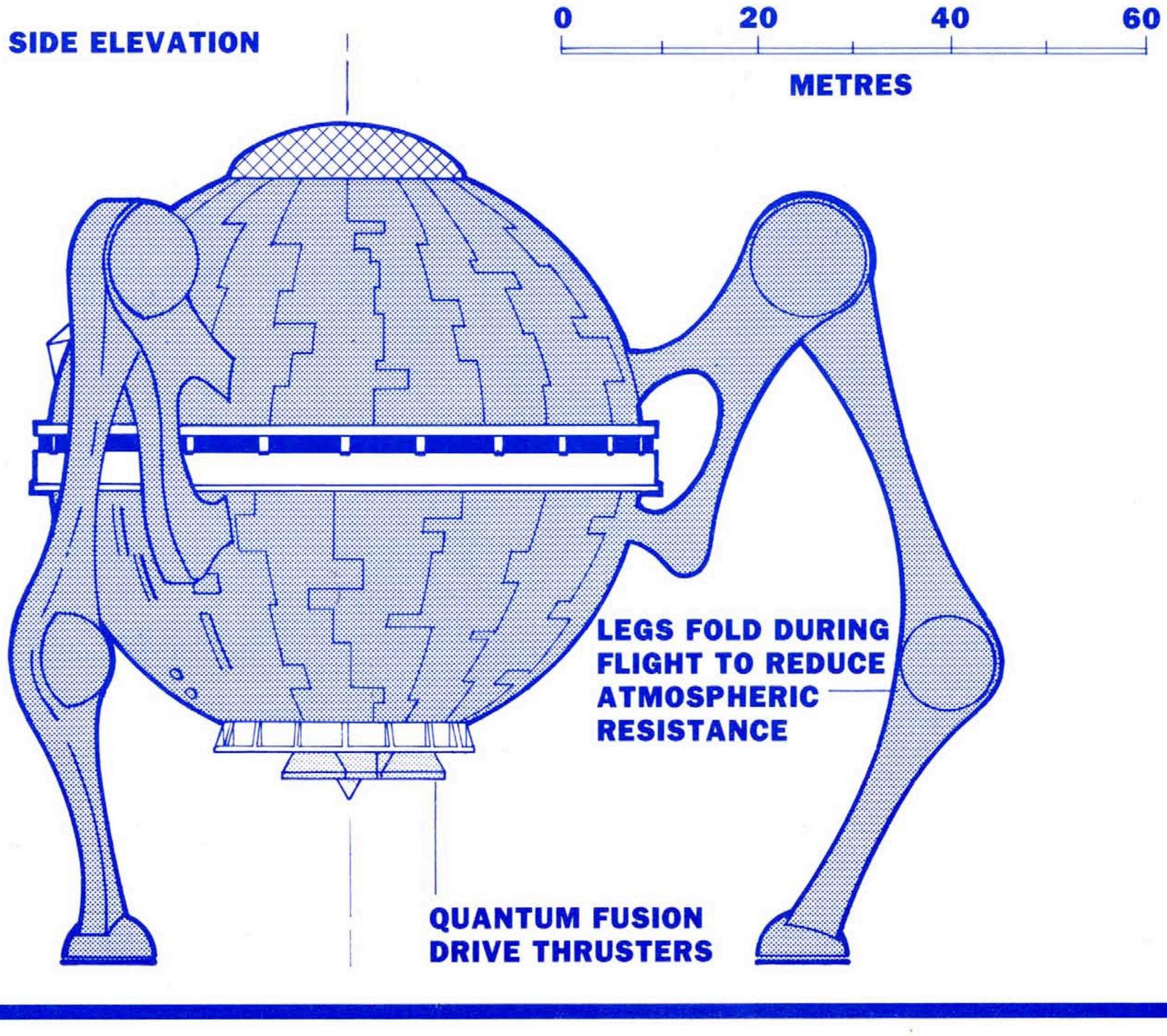
In 400,000,000 B.C. a Jagaroth spaceship exploded during lift-off from Earth. Scaroth, its pilot, was caught in the warp-field and was split into twelve segments. These scattered across Time, to reappear during various periods of Earth's history. Determined to survive, however, Scaroth influenced the way science developed on the planet, so that his 20th century segment, Count Scarlioni, would be able to prevent the disaster and thus save his race from extinction.

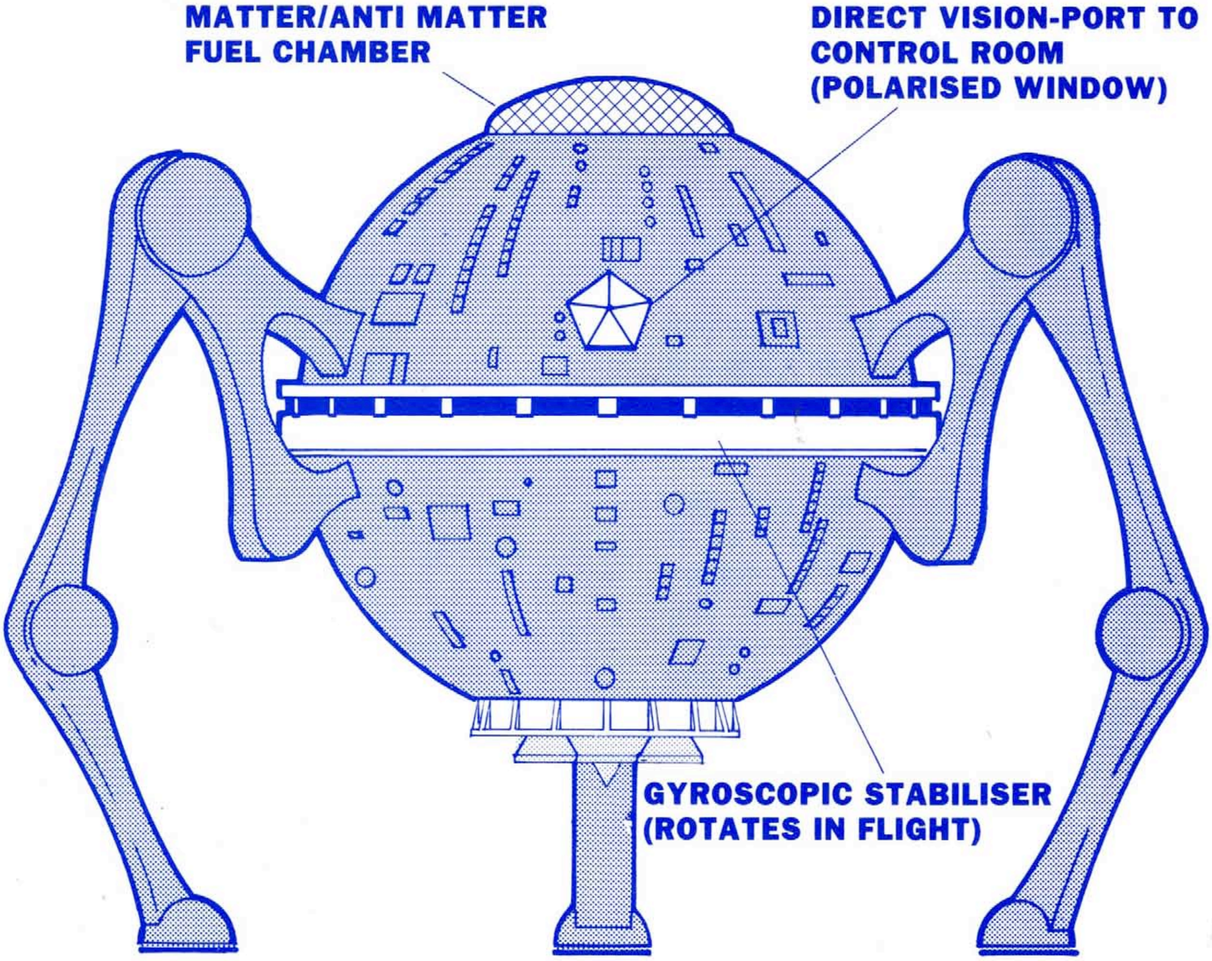
Scarlioni was not entirely successful but he forced Romana to help him to travel back through Time to before the explosion, by threatening the city of Paris.

However, the Doctor realised that the explosion of Scaroth's ship had been responsible for creating the first spark of life on Earth. Swiftly following Scaroth back through Time in the TARDIS, he was able to make sure that Scaroth could do nothing to change the situation.

☐ **WHITE**

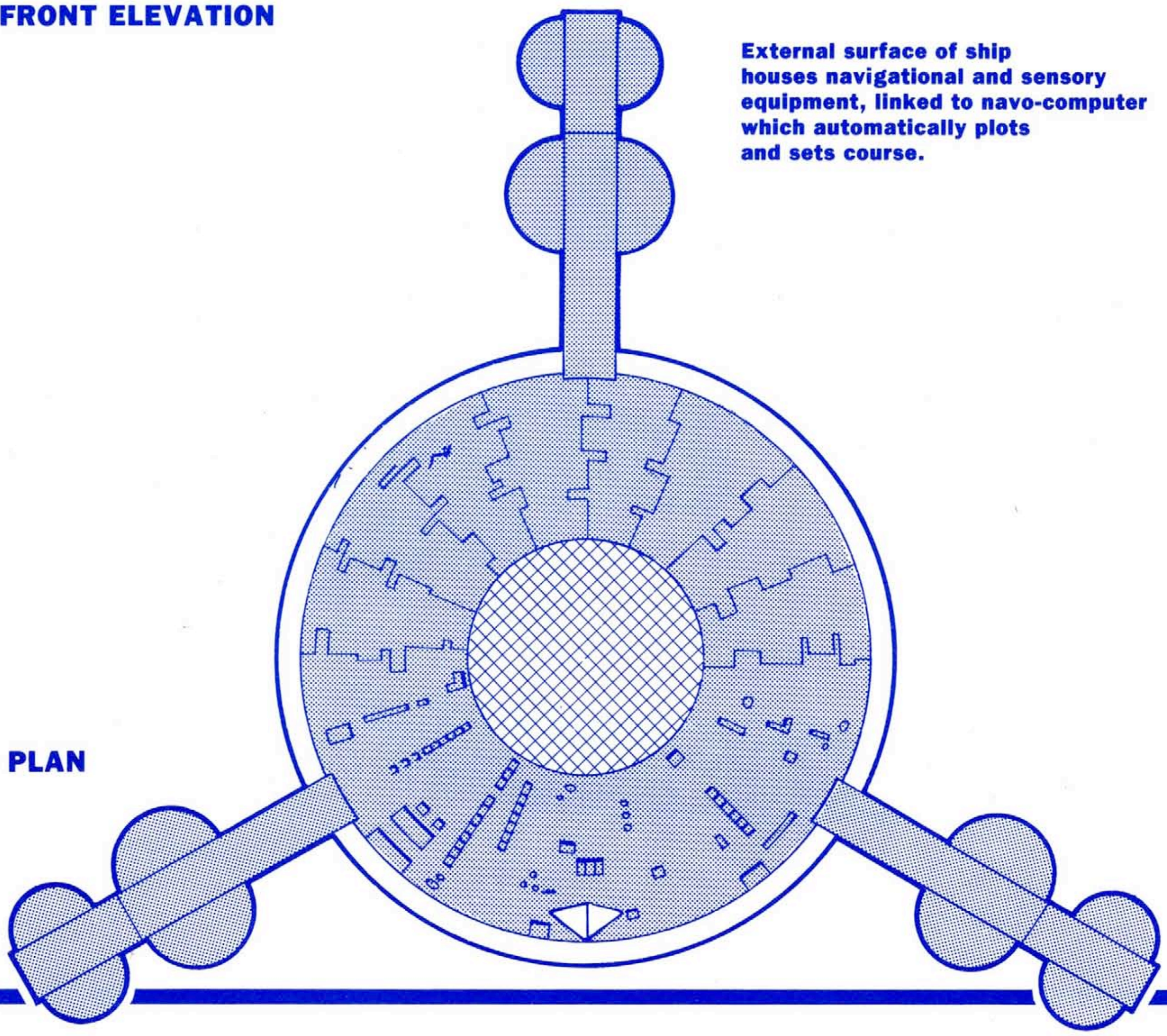
▨ **BLACK**


SIDE ELEVATION
0
20
40
60
METRES
LEGS FOLD DURING FLIGHT TO REDUCE ATMOSPHERIC RESISTANCE
QUANTUM FUSION DRIVE THRUSTERS


MATTER/ANTI MATTER FUEL CHAMBER
DIRECT VISION-PORT TO CONTROL ROOM (POLARISED WINDOW)
GYROSCOPIC STABILISER (ROTATES IN FLIGHT)

FRONT ELEVATION

External surface of ship houses navigational and sensory equipment, linked to navo-computer which automatically plots and sets course.

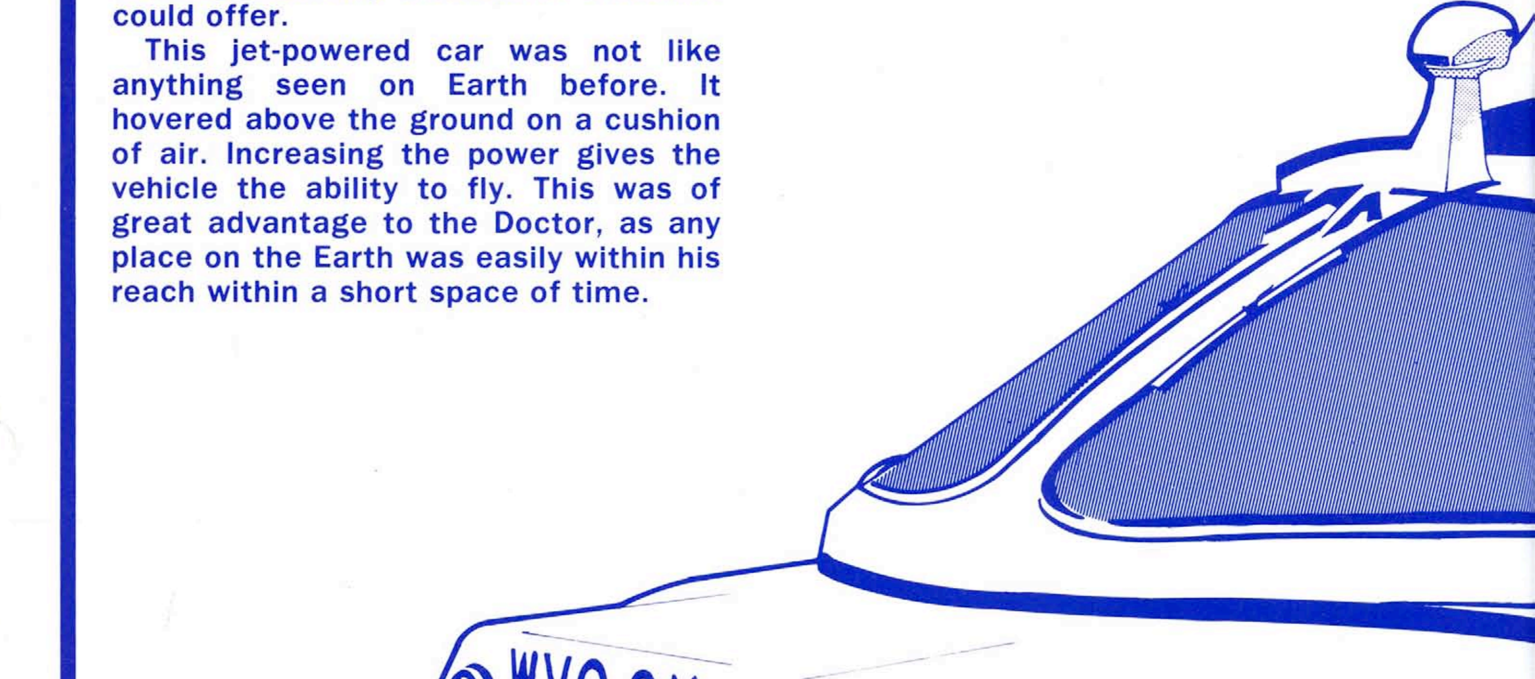


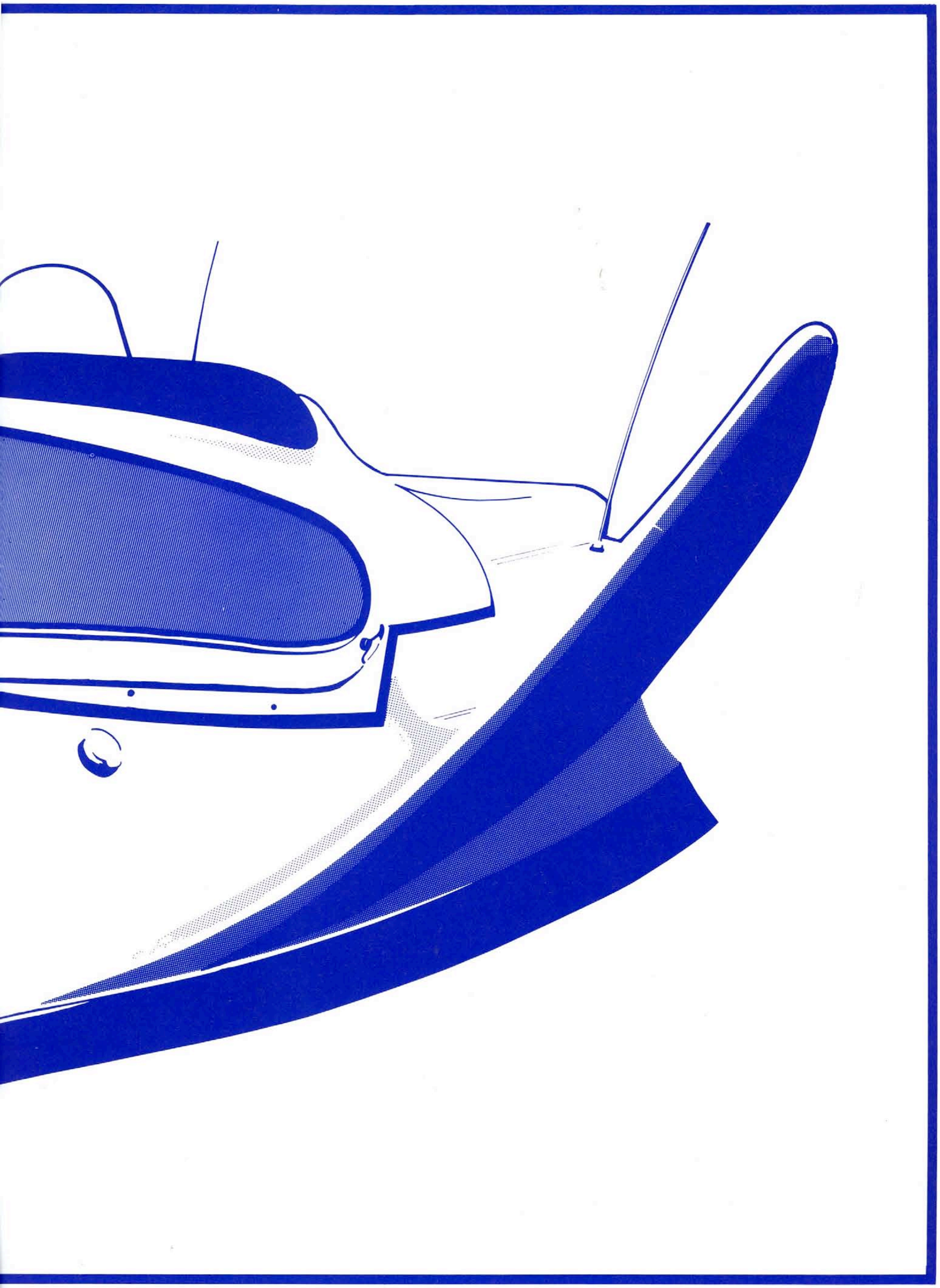
PLAN

THE DOCTOR'S CAR

During the third Doctor's time on earth he found it necessary to design a vehicle which could provide him with more mobility than any 'man-made' machine could offer.

This jet-powered car was not like anything seen on Earth before. It hovered above the ground on a cushion of air. Increasing the power gives the vehicle the ability to fly. This was of great advantage to the Doctor, as any place on the Earth was easily within his reach within a short space of time.

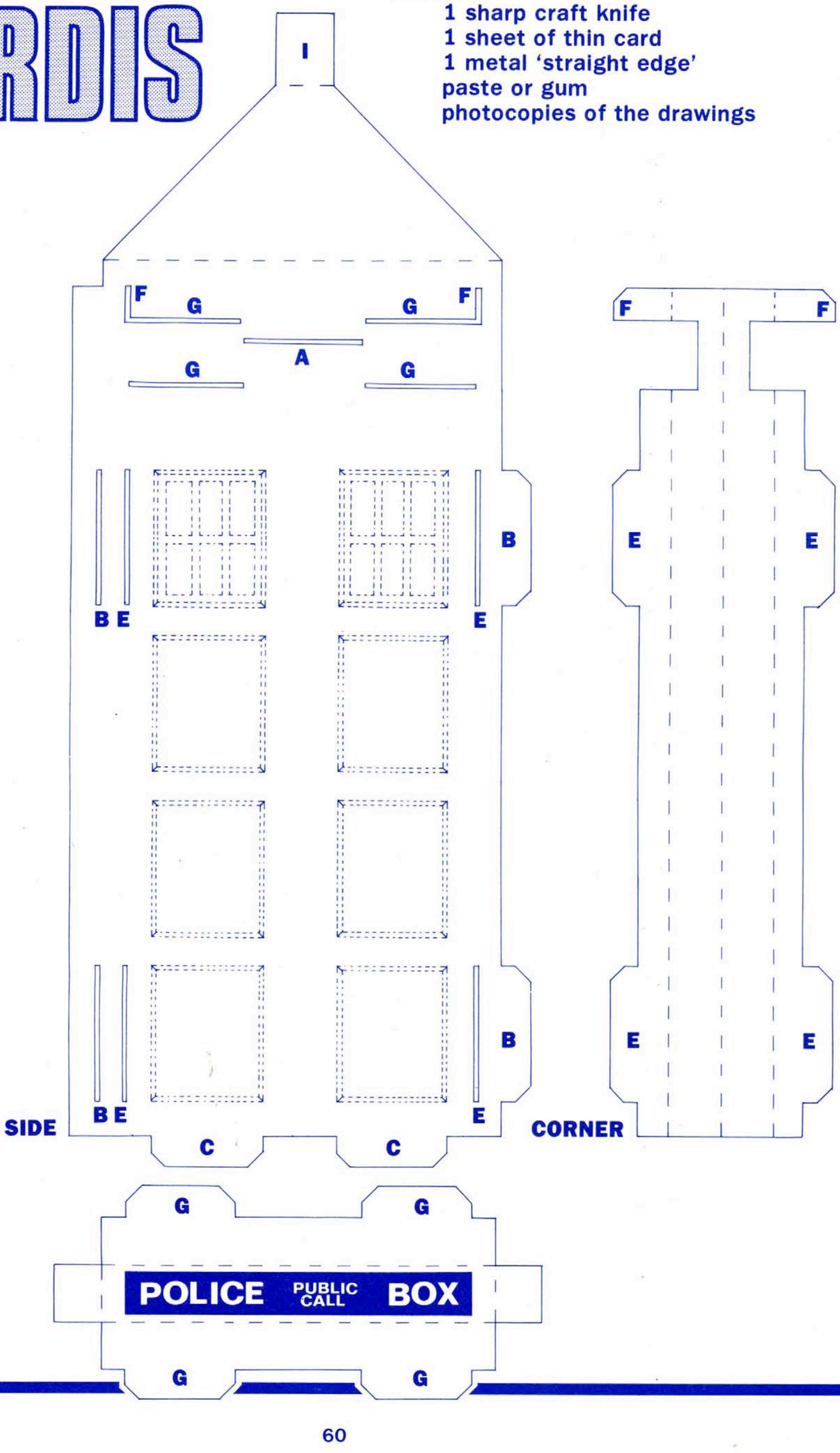




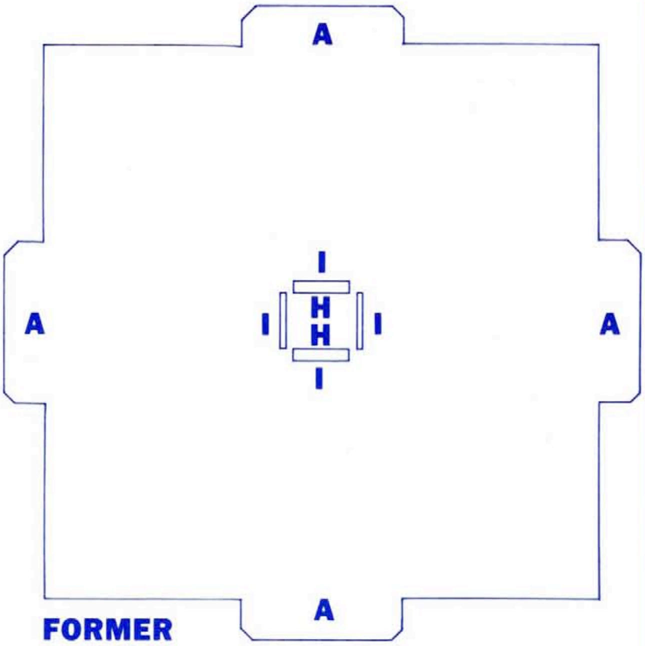
BUILD A TARDIS

To make this model police box you will need: –

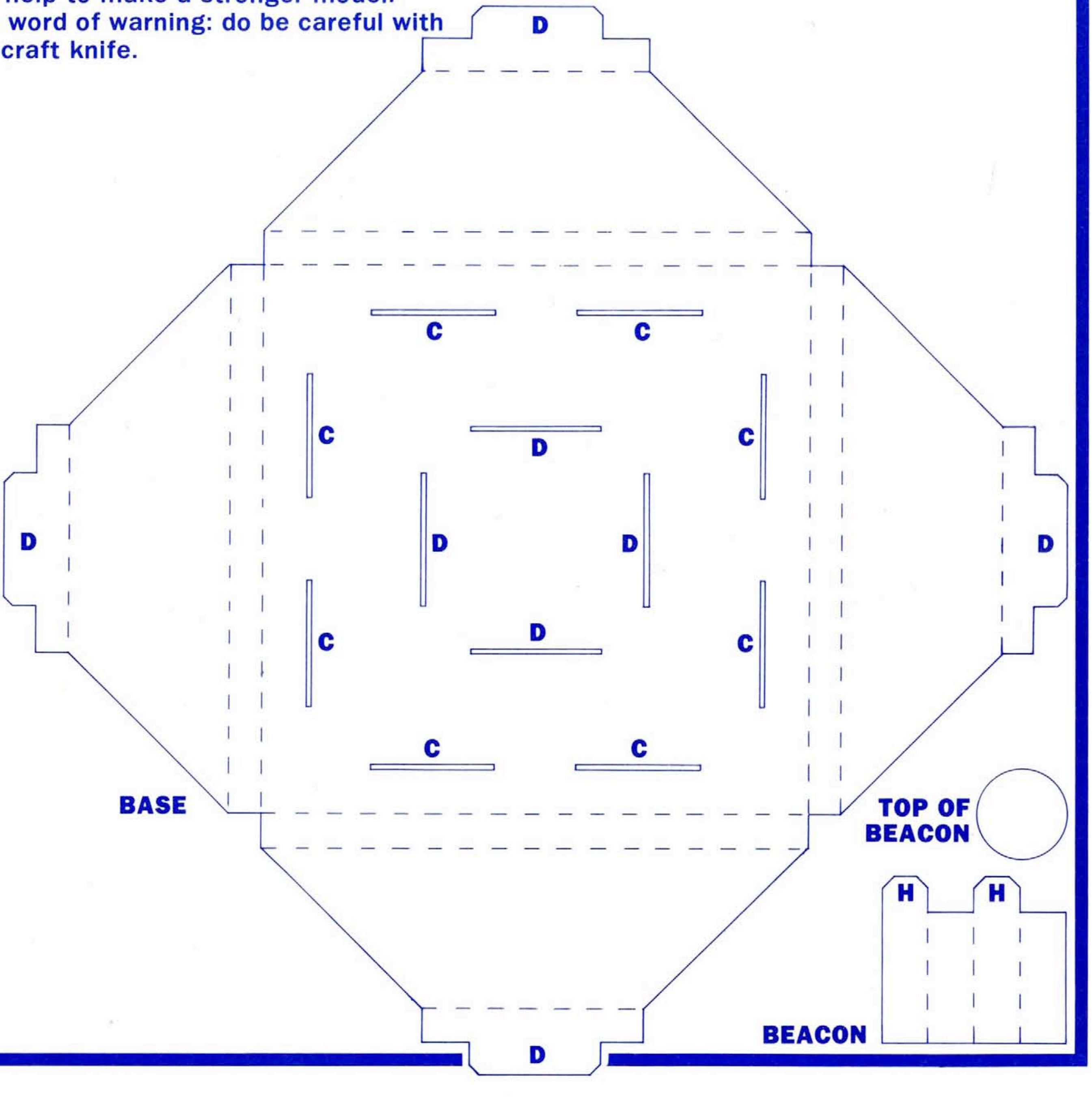
1 sharp craft knife
1 sheet of thin card
1 metal 'straight edge'
paste or gum
photocopies of the drawings


I
F
G
G
F
A
G
G
B
B E
E
B
B E
E
SIDE
C
C
F
F
E
E
E
E
CORNER
G
G
POLICE PUBLIC CALL BOX
G
G

1. Make 4 photocopies of page 60 and 1 photocopy of page 61 (or you could trace the drawings).
2. Paste all 5 copies onto the thin card and allow to dry.
3. Carefully cut out all the parts taking care to include all the slots.
4. Parts which must be bent over or folded should be scored gently with the craft knife. Refer to the illustration for which lines must be scored.
5. When all parts have been cut, and scored where necessary, the model may be assembled. Begin by fitting tabs 'A' into slots 'A', tabs 'B' into slots 'B' and so on. For any clarification, refer to the exploded diagram on page 62.
It is not absolutely necessary to use glue in the construction of this model, but it can help to make a stronger model.
One word of warning: do be careful with the craft knife.



FORMER

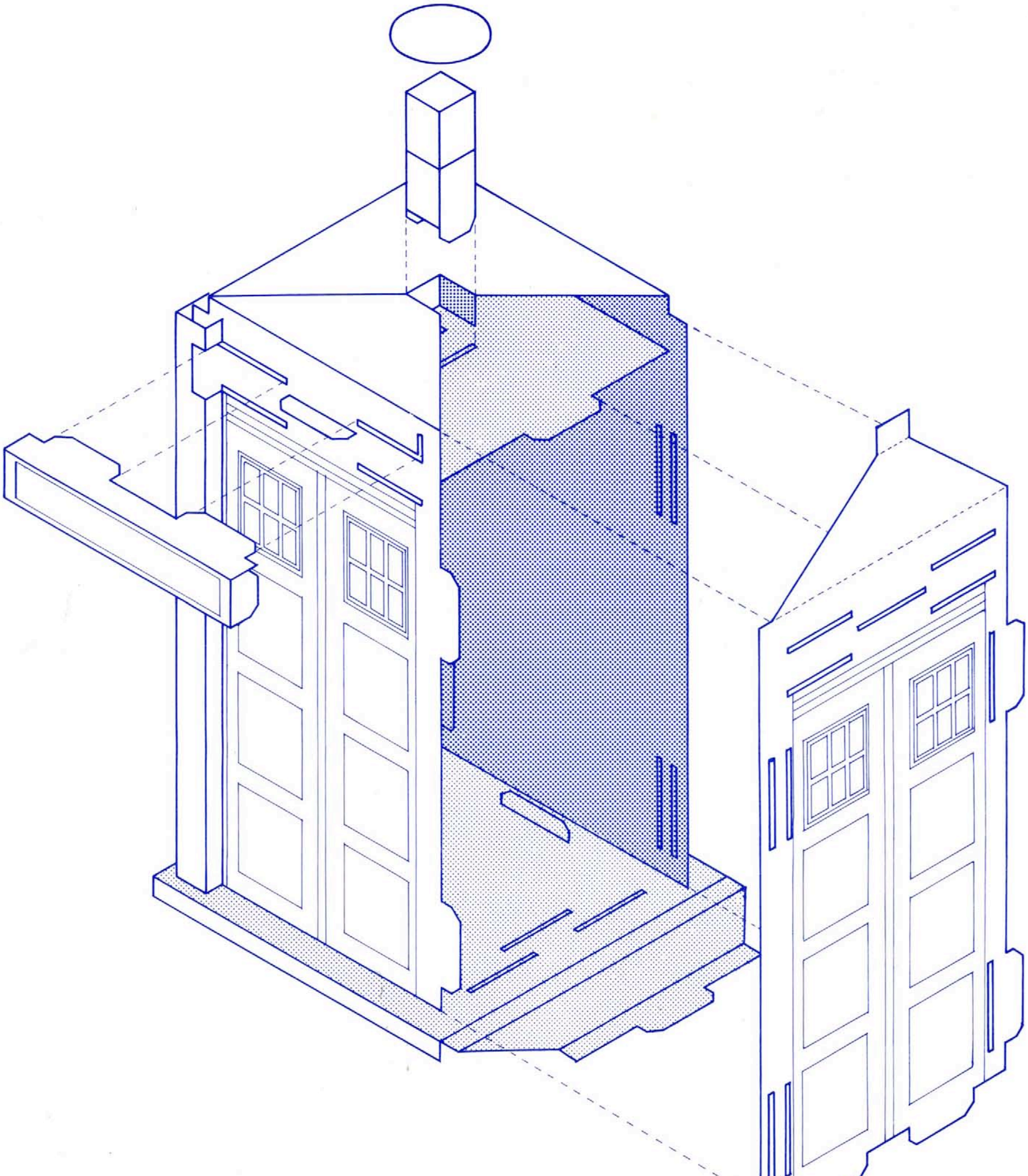


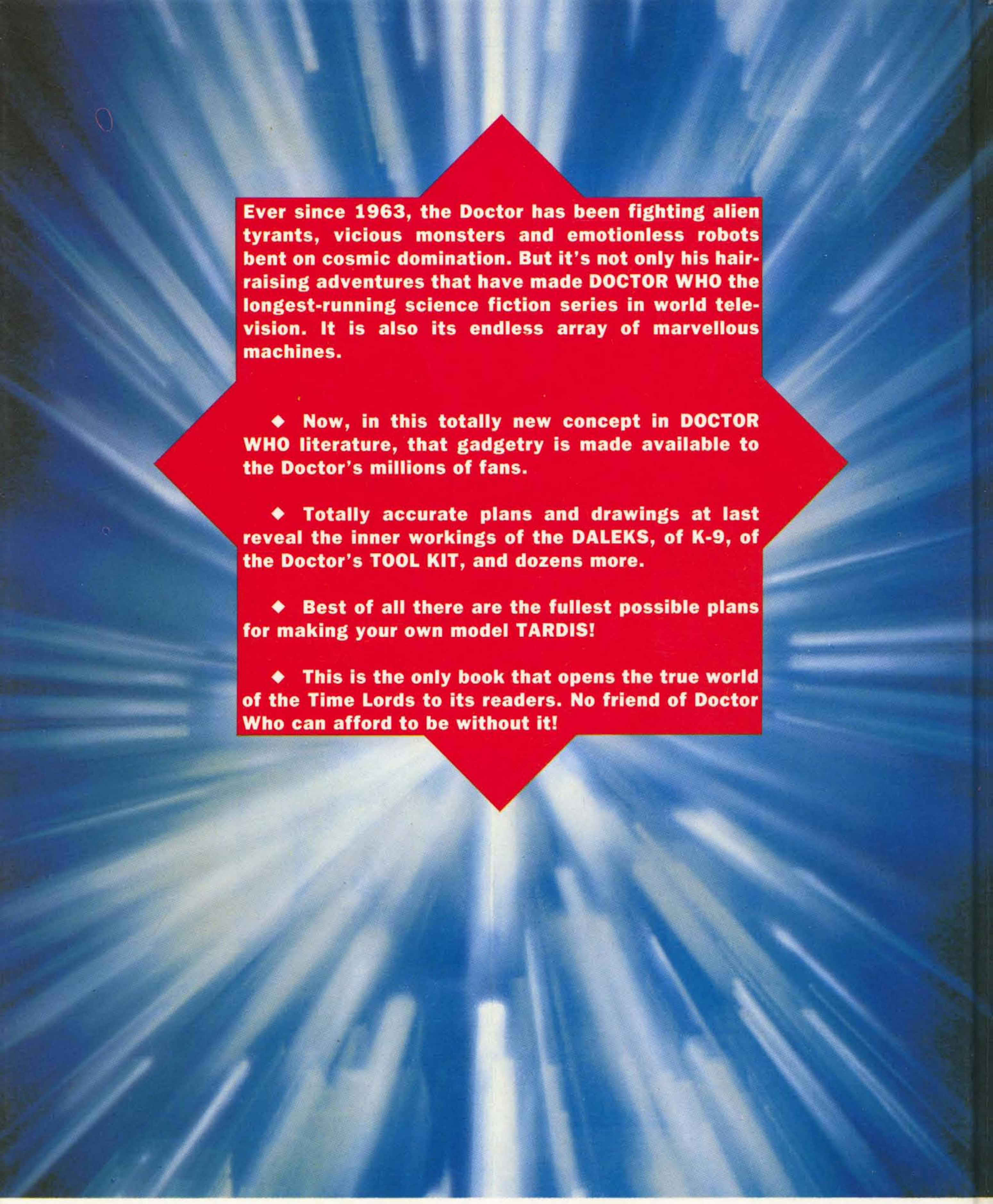
BASE

TOP OF BEACON

BEACON

BUILD A TARDIS





Ever since 1963, the Doctor has been fighting alien tyrants, vicious monsters and emotionless robots bent on cosmic domination. But it's not only his hair-raising adventures that have made DOCTOR WHO the longest-running science fiction series in world television. It is also its endless array of marvellous machines.

◆ Now, in this totally new concept in DOCTOR WHO literature, that gadgetry is made available to the Doctor's millions of fans.

◆ Totally accurate plans and drawings at last reveal the inner workings of the DALEKS, of K-9, of the Doctor's TOOL KIT, and dozens more.

◆ Best of all there are the fullest possible plans for making your own model TARDIS!

◆ This is the only book that opens the true world of the Time Lords to its readers. No friend of Doctor Who can afford to be without it!

ISBN 0 7278 2034 6

SEVERN HOUSE

SEVERN HOUSE PUBLISHERS Ltd 4 Brook Street London W1Y 1AA

£ 4.95 UK only